

It's Important to Know In Time'

Member Associated Business Papers, Inc.; Audit Bureau of Circulations.

The Newspaper of the Industry

Inside Dope

By George F. Taubeneck

New Bulletin Design
High Optimism in Washington
Watch and Pray
Ed Newill Rings the Bell Again
Prepare for Peace
What Business Leaders Think

New Bulletin Design

Better service for all subscribers will be introduced next week in a newly designed Bulletin Edition. This alternate-week Bulletin will appear in the popular news-letter form—easy to read, quick to grasp, exceptionally fast to produce and mail.

It will come to you in envelopes, and will contain the very latest up-to-the-minute newstips and behind-the-scenes information.

All advertising is being eliminated from these Bulletin issues. We hate to lose the revenue, but the resulting saving in paper will help us stay within our quota, as well as make the Bulletin more compact, easier to handle, and quicker to read.

We hope you like the improvement.

High Optimism In Washington

Washington officialdom has been optimistic on an early settlement of the war in Europe for several months, but never before so highly optimistic as it is right now.

They're doing their best to conceal this optimism because of the labor situation. The "quit rate" in war plants disturbs them almost as much as the strikes. About the only card left in the Germans' hand is the unsettled American labor front.

If all workers were staying on the job, the Germans would have no room left for hope, and nothing left to do but settle for whatever they could salvage.

That peace negotiations have been in progress is believed by many in high places. It is expected that invasions of continental Europe will probably take place anyway. But settlement is expected before winter.

As for Japan, there is evidence that something is afoot on that front, also. Terrific blows from our Pacific forces are expected momentarily. And, as one Washington key observer put it:

"The Jap militarists now realize they made a little miscalculation—a matter of about two or three hundred years—in their preparedness to take on the world's greatest industrial nation. You can look for almost anything to happen over there."

Watch and Pray

Of course Washington has been wrong in its guesses before, and this optimism could be mighty wrong now. We're merely reporting what we heard, almost everywhere last week. The sum of it is: great historical news will be made this summer.

All of us with associates and relatives abroad say: the sooner the better.

As Benjamin Franklin once put it: "There never was a good war or a bad peace."

In the meantime, the suspense is terrific!

Ed Newill Rings The Bell Again

Now it can be told that the Allison Div. of General Motors is turning out the world's most powerful aircraft engine. It is a 24-cylinder job (liquid-cooled, of course) rated at 3,000 hp.

Soon a new fighting plane incorporating this marvelous engine—which gives the plane the greatest striking power of any fighter yet to

(Concluded on Page 12, Column 3)

Air Conditioning & Refrigeration

Reentered as second-class matter October 3, 1936 at the post office at Detroit, Michigan, under the Act of March 3, 1879. Trade Mark Registered U. S. Patent Office. Copyright, 1944, by Business News Publishing Co.



'Written To Be Read on Arrival'

Issued Every Monday at Detroit, Michigan

JUNE 5, 1944

Vol. 42, No. 6, Serial No. 794
Established 1926.

Gov. Dewey Asks State Program 'Take Advantage of Quick-Freezing Progress'

A User Himself of a Home Freezer, He Predicts They Will Be as 'Common as Refrigerators'

ALBANY, N. Y.—Predicting that home freezer units will some day be as common in homes as refrigerators are today, Gov. Thomas E. Dewey announced May 25 that he had directed the State Emergency Food Commission to prepare a program designed "to improve the standard of living on our farms, and to better the diets of our city people."

New knowledge gained by the state in dealing with food shortages and shortages of transportation should not be sacrificed, he said, but should be used to stabilize the state's agriculture and to "feed our people better."

Requesting Harold Stanley, chairman of the Emergency Food Commission, to organize within the commission and under its direction a farm-to-kitchen program of food preservation, Gov. Dewey asked that the plan be developed during the current year so it could go into operation immediately upon the cessation

of hostilities upon either the German or Japanese fronts.

"Great advances have been made in the methods of processing goods as a result of our war program," the Governor pointed out. "There are those who believe that a whole series of quick-freezing, cold-storage, and transportation services, starting at the farm and ending in the consumer's kitchen, will do much to preserve the quality of our more valuable foods and make them more evenly available throughout the year. A great deal of hope is held forth for quicker and cheaper methods of transportation."

Enormous possibilities in the home freezer field alone were envisioned by Gov. Dewey, who on his own farm at Pawling, Dutchess County, has preserved fresh salmon for nine months. On Christmas Day, he said, he served two pies from his own freezer which had been prepared for

(Concluded on Page 25, Column 2)

6 Million Boxes Needed Now by Civilians—OCR

WASHINGTON, D. C.—Six million household refrigerators are needed to meet civilian demand today, believes the Office of Civilian Requirements, and it is reported that OCR opposes production of "victory" model refrigerators and washers because buyers of such units would be "highly unsatisfied."

Fully aware that the eventual authorization of refrigerator production will probably be made on a limited basis, OCR has informed the War Production Board how it would distribute various amounts.

Minimum production of 25,000 refrigerators would meet the requirements for preservation of blood plasma, serums, biologicals, and for use in industrial control processes, estimates OCR.

An additional 15,000 would give adequate cooling for milk in nurseries, and for special diets needed by people suffering from diabetes, tuberculosis, cancer, and ulcers.

Some 200,000 more would provide for new housing where ice is not available.

Replacement of completely worn out refrigerators would require an additional 250,000 units.

About 350,000 more would preserve food where ice is not available or where deliveries are inadequate.

The balance, 5,160,000, would meet all other needs.

Postwar 'Home Freezer' Planned by Seeger

ST. PAUL — Walter G. Seeger, president of the Seeger Refrigerator Co. here, has just announced that Seeger will make a "freezing cabinet" for use by the home owner in the postwar era, in addition to its line of commercial refrigerators which it has been making for nearly half a century.

Declaring that his company had "polled" public opinion on the type of cabinet desired, and that its engineering staff had studied the problem from all angles, Mr. Seeger said that this effort had revealed that the demand is for a 6-cu. ft. cabinet.

Among the features of one model in the Seeger line will be three pull-out drawers, two for freezing and storing foods, and one for storage only. A promotion campaign will be started this summer to acquaint dealers and the public with the line.

Kelvinator Postwar Move Advances Legg, Farrell and Packard

DETROIT—In a move toward the postwar expansion of home office operations and executive responsibilities, Charles T. Lawson, Nash-Kelvinator vice president in charge of the Kelvinator appliance division, has announced the appointment of three assistant general sales managers, E. R. Legg, T. A. Farrell, and D. A. Packard.

"Although many of our executives are spending a major portion of their time on our war production, it is not too early to start taking the steps necessary to set up the type of an organization we must have to handle the greatly increased volume of business which we expect to do in the years following the war," the announcement stated.

"From these appointments will develop highly specialized and completely contained departments which will enable us to broaden and intensify our various sales activities and, in doing so, better serve both

(Concluded on Page 4, Column 5)

Gov't Seeks Bids on 393 Commercial Iceboxes

CINCINNATI—Office of the Procurement Division of the U. S. Treasury Dept. at 8th and Walnut Sts. here will accept bids until June 26 on 298 commercial-sized ice refrigerators made by C. V. Hill & Co., and 95 commercial-sized ice refrigerators made by the Deteco Scales Co.

The cabinets are 4 feet 9 inches wide, 2 feet, 11 inches deep, and 7 feet 2½ inches high (including 10 inch non-removable legs). They have a storage capacity of 36.8 cubic feet and are divided into a service compartment and a meat compartment.

The equipment will be sold in lots of five or multiples of five. Bids will be taken on the total quantity. The invitation to bid which may be obtained from the office will contain information on the OPA regulations governing disposal of the equipment by the purchasers.

Correspondence or inquiries in connection with the sale of these items should be directed to the Chief, Property Utilization Div., Treasury Dept., Procurement Division, 8th and Walnut Sts., Cincinnati, Ohio.

Details Are Given Inventories of Parts at Danger Point, WPB Told

WASHINGTON, D. C.—Production of a total of 88,000 domestic electric ranges is expected to be permitted in 1944, WPB announced last week.

The terms under which production to this extent may be authorized are established in Limitation Order L-23-b, as amended May 25, 1944.

Some of the 88,000 ranges have already been produced, under a special emergency procedure, by a limited number of manufacturers. Individual production quotas for the remainder will be assigned to manufacturers who are able to produce ranges without interfering in any way with war work.

Of the total number of ranges to be produced this year, about 68,000 will be for the purpose of providing essential replacements for civilians and of meeting the requirements of new privately financed Federal Housing Administration housing projects, and about 20,000 will be used to fill "special orders." "Special orders" are those placed by the Army, Navy, Maritime Commission, War Shipping Administration, Federal Public Housing

(Concluded on Page 4, Column 1)

Russell Elected ACRMA Head

WASHINGTON, D. C.—D. W. Russell, president, Airtemp division, Chrysler Corp., was elected president of the Air Conditioning & Refrigerating Machinery Association, Inc., at its annual meeting held at The Homestead, Hot Springs, Va., May 19.

Other officers are S. E. Lauer of the York Corp., first vice president; F. S. McNeal of the Universal Cooler Corp., second vice president; and P. A. McKittrick of the Parks-Cramer Co., treasurer.

C. E. Wilson, vice president of the Worthington Pump & Machinery Corp., was elected to the chairmanship of the ACRMA Board of Directors. In addition to the officers, the members of the Board are:

W. H. Aubrey (Frick Co., Inc.)
F. T. Goes (The Vilter Mfg. Co.)
G. A. Heuser (Henry Vogt Machine Co.)
E. T. Murphy (Carrier Corp.)
Harry Newcomb (Servel, Inc.)
J. P. Rainbault (General Electric Co.)

Ross Rathbun (Westinghouse Electric Elevator Co.)

H. R. Sewell (B. F. Sturtevant Co.)
G. E. Wallis (The Creamery Package Mfg. Co.)

Miss Mary Jane Stewart continues as secretary of the Association.

Westinghouse Electric Elevator Co. has been elected to membership in the Air Conditioning & Refrigerating Machinery Association, Inc.

Discharged Veterans Source of Repairmen

CLEVELAND — Warren W. Farr, National Coordinator of Procurement and Training of the National Refrigeration Service Council, has just issued a bulletin emphasizing the availability of honorably discharged members of the U. S. armed forces as trainees for refrigeration repair work.

Approximately 80,000 war veterans are being discharged each month from military service, and the U. S. Employment Service will naturally give preference in placing these men in jobs. Many of these men will have had some technical training in the armed services, Mr. Farr points out.

In many areas the Veterans' (Concluded on Page 28, Column 1)

Advisory Committee Asks Relaxation of L-63 Inventory Order

WASHINGTON, D. C.—Inventories of repair parts for refrigeration and air conditioning equipment are dangerously low at present, the General Refrigeration and Air Conditioning Industry Advisory Committee reported at a recent meeting held in Washington with representatives of the Refrigeration and Air Conditioning Section of WPB.

To correct this situation, the committee recommended (1) that WPB make every effort possible to expedite processing of Form WPB-547 (formerly PD-1X), (2) that a higher rating be made available to the industry for obtaining production materials with which to make the necessary repair parts, (3) that inventory provisions of Order L-63, distributors' inventory limitation order, be relaxed to take care of seasonal demands for repair parts for refrigeration and air conditioning equipment, and (4) that all other possible steps be taken to speed deliveries of repair parts to replenish diminishing inventories.

An extensive discussion of the work of task committees which are studying the problem of future programming for various segments of the refrigeration and air conditioning industry was held. An outline of an organization meeting of the task groups which was held in Chicago April 27, 1944, was presented to the committee.

It was agreed by the committee that a study of past production by units for various segments of the industry should be made to gain information for future industry planning. The Program Task Committee will work with section representatives and officials of the Bureau of the Census in the development of a questionnaire.

(Concluded on Page 25, Column 3)

Westinghouse Names 3 To Executive Posts At Elevator Division

JERSEY CITY, N. J.—Ross Rathbun, manager of air conditioning at the Westinghouse Electric Elevator Co. here, has announced the appointment of three men to executive positions on his staff.

L. Gale Huggins was named assistant manager of air conditioning and will be general assistant to Mr. Rathbun in administration, engineering, and application matters; Walter C. Goodwin becomes negotiation manager with responsibility for application engineering and negotiations, and Howard A. Blair was appointed service manager.

Mr. Huggins joined Westinghouse in 1923. When the Air Conditioning Department was organized in East Pittsburgh in 1933, he became assistant to the department manager and application engineer.

Mr. Huggins accompanied the department when it was moved to Mansfield, Ohio, in 1936, and to Springfield, Mass., in 1938, and came to Jersey City late last year when the company's heavy air conditioning manufacturing activities were transferred to that city. Before leaving the New England plant he was active in the development of war equipment and the training of Army Personnel in its uses.

Mr. Goodwin joined Westinghouse (Concluded on Page 25, Column 1)

British Food Official Sees War Bringing About Great Developments In Refrigeration

Britain's Health Standard Must Be Raised Through Greater Consumption of Fresh Foods Postwar

LONDON, England—"Refrigeration is going to be one of the greatest developments after the war," declared Sir Jack C. Drummond, senior scientific advisor to the British Ministry of Food, in a speech before members of the Commercial Electric Refrigeration Association, which recently celebrated its first anniversary with a one-day convention here.

Pointing out the accomplishments of the Ministry of Food in bettering food supplies for the people of England, Sir Jack stressed the need for adequate refrigeration to preserve food in transit and storage.

Before the war, he said, one-third of the people could not buy enough of the foods necessary for the maintenance of their health. By rationing, the Ministry has improved these conditions through a general leveling up and down compromise, he explained.

But after the war it is advisable that the consumption of foods vital to health—milk, butter, cheese, eggs, fresh vegetables, and fruit—be increased, and this will mean vastly increased use of refrigeration, according to Sir Jack.

The value of vegetables and fruit is seriously hurt by bad cooking, and in the three or four days taken in transport from the garden to the green grocers' shops 70% of the vitamins of broccoli and cauliflower

can be lost, explained Sir Jack.

"The only way to prevent this loss is by the use in transport of some form of refrigeration," he said. "We must not only increase the production of protective foods after the war, but it must be made possible for all people to buy them, and apparatus for preserving them until used."

People will not keep a sufficient amount of food on hand until domestic refrigeration is in general use, said Sir Jack. Emphasizing that the means for refrigeration must be made available to the general public, Sir Jack opined that this will come about either through individual household systems or by means of communal "central station refrigeration" similar to the locker plants of the United States.

He urged the refrigeration association to institute scientific and technical research programs intended to improve refrigeration and perhaps increase its use.

Little if any competition to refrigeration will be offered by food dehydrating methods after the war, declared Sir Jack, for he believes that dehydration will remain as a commercial proposition only if the best quality is maintained and that, he said, can only be produced with the aid of a vacuum-ice refrigeration system, such as used in drying blood plasma.

New M-H Division To Market 'Moduflow' Line Of Heating Controls

MINNEAPOLIS—Formation of a new division to manufacture and market its recently announced Moduflow heating control system was announced recently by the Minneapolis-Honeywell Regulator Co.

Harry C. Jenkins, formerly mid-western zone manager, has been promoted to management of the newly created post, C. B. Sweatt, vice president said, while a nucleus of a sales organization has been started by the addition of three specialists to the staff. Moduflow will not be placed on the market until after victory or until materials are made available, he said.

Assisting Mr. Jenkins in his new position are three engineers who will work for the present in the Minneapolis and Chicago offices of the company. They are John E. Peterson, Milford G. Bird, and Bruce F. McLouth.

Cooper-Louisville Co. Takes New Building

LOUISVILLE, Ky.—Cooper-Louisville Co., Crosley distributor, has purchased a four-story building at 305 W. Main St. here in the wholesale district for occupancy beginning July 1. Now concentrating on appliance servicing and distribution of such items as rugs, paint, etc., the firm covers 74 counties in Kentucky and 20 in southern Indiana.

Trend To 'Ensemble Selling' of Appliances For the Home Predicted To Utility Group

Power Consumption In the Home Likely To Jump 50%

KANSAS CITY, Mo. — Increased use of electrical appliances in the postwar home, and the expected tremendous expansion in home building after the war offers a big market for electric power, declared Tom Fort, manager, central station department of Westinghouse Electric & Mfg. Co. in a recent address before the Missouri Valley Electric Association here.

"Just how great a market you have for power in the home may be judged in this fashion," said Mr. Fort in his discussion of "The Future of Electric Power." "Select an average home and figure out every electrical device you could reasonably recommend for that home. You would probably come out with enough devices to run the home's power consumption up to about 10,000 kw. hours per year."

"This is your potential home market today. If you had done this same thing in 1920 your answer would have probably been about 2,500 kw. hours per year. Your home power market today is four times as great as it was in 1920," he stated.

TREND OF FUTURE SALES

"After the war it is felt that various parts of the house will be looked at as units when they are considered for the sale of appliances. By that I mean, instead of thinking of selling ironers or washing machines, you will think of equipping a house with a complete electric laundry—this will include a hot water heater, automatic washing machine, electric dryer, and ironer. The same will be true in the kitchen where the electric kitchen will include the range, refrigerator, dishwasher, disposal unit, roaster, coffee maker, electric mixer, waffle iron, ventilating fan, and radio," he added.

"Our electrical appliance people tell us that these electric departments in the home will be merchandised by a technique they call 'ensemble selling.' Architects are already designing postwar homes with many of these electrical devices actually built into the rooms of the house."

"When you consider the pent-up demand for appliances and home modernization which will be released with the end of the war, you get only part of the story. A careful check by leading housing authorities indicates that housing construction after the war will probably be on the following schedule:

"First year, 350,000 to 400,000;

second year, 500,000 to 600,000; third year, 700,000; fourth year, 900,000; fifth year, 1,000,000 or more."

That the postwar home will consume 50% more power was predicted by Mr. Fort. In 1943 the average residence consumed 1,030 kw. hours per year, but this should jump to 1,500 kw. hours within five years after the war ends, believes Mr. Fort.

AIR CONDITIONING LOADS

Air conditioning, air cleaning, better lighting, and other applications for more electric power will also increase the commercial power load, probably 20% to 25% within the first five postwar years, Mr. Fort said.

"Another new field for electric power is the cleaning of air," he added. "There are many cities like Pittsburgh, St. Louis, Cleveland, and other localities where soft coal is burned, where air-borne dirt is a very serious problem. This air-borne dirt problem is also serious in many factories. There are many places where people work where welding fumes, oil mists, and other foreign matter in the air make working conditions very disagreeable."

Use of an electrostatic air filter, such as the Westinghouse "Precipitron," will combat this dirt problem, and, of course, add to the power load, pointed out Mr. Fort.

Germany's Defeat Would Free 35% of Production

WASHINGTON, D. C.—Defeat of Germany will free 35% of America's production capacity now devoted to war work for the manufacture of civilian goods, according to Charles E. Wilson, executive vice chairman of the War Production Board.

Annual rate of war production would be cut from the present \$71,000,000,000 to about \$46,000,000,000 with \$25,000,000,000 being available for peacetime production, estimated WPB officials.

"We need three plans, not just a postwar plan," he stated. The first and most important plan is for war production. The second "is a method of carrying out essential civilian production coincidentally with war work," explained Mr. Wilson, and the third is a long-range postwar plan for full production and full employment.



MAKE YOUR REFRIGERATOR with Distinctive FORMICA COLOR

MAKE your refrigerator stand out on the sales room floor and attract the delighted eye of the feminine purchaser by equipping it with Formica breaker strips in pastel colors.

This is a touch that adds sales appeal out of all proportion to its cost.

The material has the same fundamental qualities as the black laminated plastic breaker strip. It has a smooth, durable non-absorbent finish that is not spotted by sweating or the collection of moisture. It will stand frequent and vigorous cleaning without injury to the finish.

A wide range of colors is available for your selection.

"The Formica Story" is a moving picture in color showing the qualities of Formica, how it is made, how it is used. Available for meetings of engineers and business groups.

THE FORMICA INSULATION COMPANY
4610 Spring Grove Avenue Cincinnati 32, Ohio



VIRGINIA Refrigerants



**TESTED
PURITY
for
SERVICE
SURETY**

"EXTRA DRY ESOTO", "V-METH-L" AND METHYLENE CHLORIDE
AGENTS FOR KINETIC'S "FREON-12"—AND "FREON-22"

VIRGINIA SMELTING CO.

WEST NORFOLK, VIRGINIA
72 Beaver St., New York 5 131 State St., Boston 4

Kelvinator Breaks National Magazine Campaign to Help Dealers and Service Men during Critical Summer Months

Promotes User Cooperation on Service When It Is Needed Most!

Tying in with the nationwide "Better Care—Less Repair" activity, Kelvinator's Summer Service Program is aimed to show consumers how to keep their refrigerators and ranges at peak efficiency for the duration . . . to help cut down needless

service calls . . . to gain "good will" for the Kelvinator dealer by obtaining customer understanding and cooperation when delays in handling service calls are unavoidable. It is a program to help the dealer—by helping his customers.



Two Wartime User's Guides

Kelvinator's Wartime User's Guides for refrigerators and electric ranges tell customers how to diagnose and report trouble accurately, how to take better care of appliances so needless servicing will be unnecessary. Designed to save nuisance calls, these booklets will help the owner and build good will for Kelvinator dealers. Available, free, in reasonable quantities to all Kelvinator dealers.



Magazine Advertising Has Combined Circulation of over 16,000,000

Appearing at the beginning of the service rush season, attention-getting, colorful ads will appear in magazines that reach 16,000,000 readers. Among these readers are your pre-war customers . . . and your postwar prospects. Striking illustrations dramatize the need for customer

cooperation in helping dealers render efficient service. And the new Kelvinator User's Guides are offered in each ad. See this advertising in the *Saturday Evening Post*, *McCall's*, *Better Homes and Gardens*, *Good Housekeeping*, *Household* and *True Story*.



Special Dealer Helps Available

A complete set of human interest double and single column newspaper mats are available for dealer's use in telling the Kelvinator Service story locally. There are also one-minute spot

radio announcements, friendly letters for mailing to customers and a handy *Telephone Conversation Guide* to assist you in handling service telephone calls efficiently.



Service Program Plan Book

The entire Kelvinator Service Program is completely outlined in this aptly named Plan Book, "Keeping Friends through Wartime Service." If you haven't received your free copy, contact your nearest Kelvinator Zone or Distributor.



The men and women of the Propeller Division of Nash-Kelvinator Corporation have been awarded, and proudly fly and wear, the famous Army-Navy "E" for High Achievement in War Production.

LOOK AHEAD WITH



KELVINATOR

DIVISION OF NASH-KELVINATOR CORPORATION
Kewauqua - Milwaukee - DETROIT - Grand Rapids - Lansing

WPB Explains How To Apply To Produce or Sell an Electric Range

(Concluded from Page 1, Column 4)
ing Authority, the Home Owners' Loan Corp. acting for the National Housing Administration, and export orders.

The 88,000 ranges represent about 16% as many as were produced in the year ending June 30, 1941. Production at the rate of 68,000 for civilians this year will not meet the total demand which has arisen since electric range production for civilians was stopped June 1, 1942, but it is expected to take care of the most essential requirements, according to WPB.

RANGES WON'T BE RATIONED

Manufacturers will distribute the ranges that are available for replacement purposes equitably through the normal retail channels, WPB said. The ranges will not be rationed, and preference ratings lower than AAA are no longer valid for electric ranges, but any person who wishes to buy an electric range for home use is to present to his dealer a signed, written certificate, stating as follows:

"I certify to the War Production Board and to the seller: I own or occupy the residence at It has the inside and outside wiring needed for an electric range, and my electric company has told me that electric service for range operation will be supplied. I do not have any electric range for this resi-

dence which can be used or repaired."

Ranges for use in approved new war housing projects may be sold only if the purchaser endorses the following statement on his purchase order:

"This order is placed pursuant to authority granted under Order P-55-c. I have been authorized by the War Production Board or National Housing Agency to install these electric ranges in Project No. located at"

WPB expects to direct manufacturers to hold back a proportion of their ranges for use in such housing projects until they receive actual orders from dealers.

3-BURNER RANGES NOW

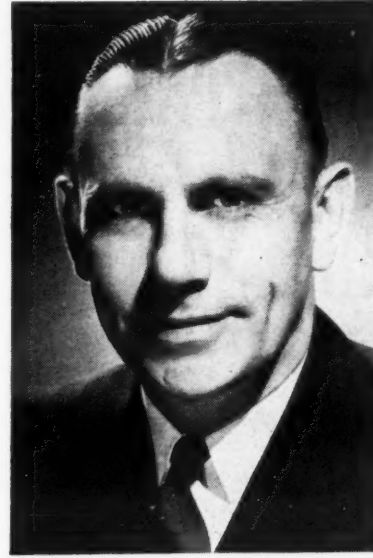
Only three-burner, apartment-house type electric ranges, already in production under emergency procedures, are expected to be available before the latter part of the year. Manufacturers who may be authorized to make standard four-burner models beginning in the third quarter of this year will require between 90 and 120 days to get into production. Standard four-burner models, therefore, are not expected to be ready for distribution until the fourth quarter.

Manufacturers who wish to participate in the production program will file applications on Form WPB-3700 with the WPB field office for the district in which the electric ranges

New Assistant Sales Managers of the Kelvinator Division



DAN PACKARD



E. R. LEGG



T. A. FARRELL

Kelvinator Names 3 To New Posts

(Concluded from Page 1, Column 3)
our wholesale and retail selling organizations.

The appointments made cover three important sales activities of the Kelvinator Division:

E. R. Legg has been appointed assistant general sales manager in charge of the Commercial and Contract Division. With Kelvinator since 1927, Legg had many years of field selling experience before his appointment in 1934 to the post of manager of National Direct Division with headquarters in Detroit. Subsequently, Legg was named sales manager of the Leonard division, later western sales manager for Kelvinator, and from 1941 to early 1943, household sales manager. For the past year, Legg has specialized in developing a postwar program for the products of his new division.

T. A. Farrell has been named assistant general sales manager in charge of operations including supervision of Eastern, Western, and Pacific Coast regional managers, as well as business operations in the home office. With Kelvinator since 1939, Farrell, for the past 2½ years has served as manager of the Government Contract Division and for the present will continue to serve in this capacity in addition to his new assignment. Prior to the war, Farrell was manager of the Commercial Parts and Service Division.

D. A. Packard is named assistant general sales manager and will be directly responsible for sales and merchandising activities on all Kelvinator household products. He has been with Kelvinator since 1940 and has served as eastern sales manager for the past few years. His new duties will include direct supervision of all merchandising activities including franchising, sales strategy, and sales training plans.

large manufacturers. Authorizations to produce ranges for "special orders" will be made without reference to base period production.

All quotas assigned for civilian production will specify not only the number of ranges permitted to be produced, but also the models to be made. In general, no single manufacturer will be authorized to produce more than one standard four-burner model and one three-burner, apartment-house type electric range for other than special orders.

WHAT MODELS TO PRODUCE

Approval of models will be based largely on economy of production and on volume of production of the individual models by a manufacturer during the base period. Any manufacturer who is unable to produce electric ranges without interfering with war work may apply to WPB (on Form WPB-3700) for permission to have another manufacturer make ranges for him.

Except for inventory restrictions, the previous limitations on the production of repair and replacement parts have been removed. Under the amended order, each manufacturer's inventory of parts (including repair and replacement parts) is limited to a three month's supply. Production of parts which would bring his inventory beyond that point is prohibited, except that no manufacturer is required to make less than a minimum practical run of any parts.

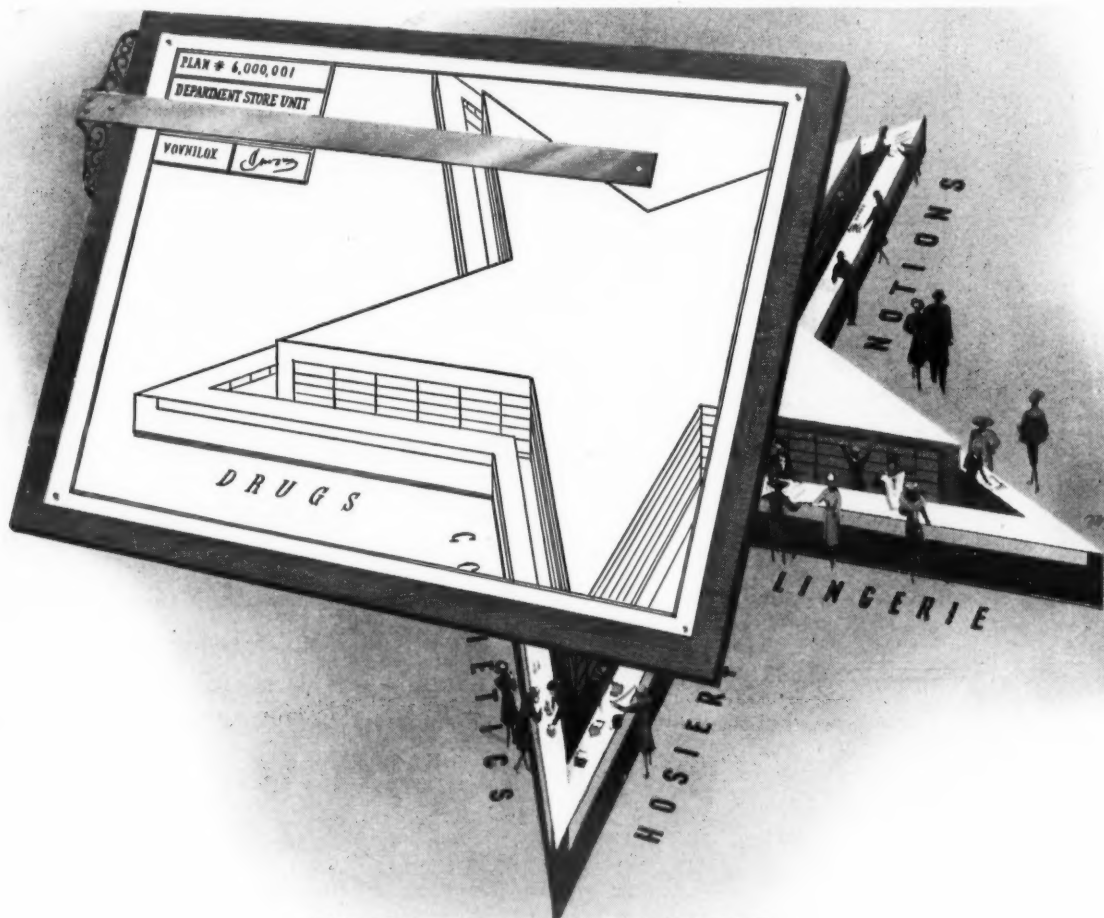
REFRIGERATION ACCESSORIES

- Instantaneous Water and Beverage Coolers.
- Oil Separators.
- Two-Temperature Valves.
- Accumulator Heat Exchangers.

- Equalizer Tanks.
- Controlled Temperature Photographic Processing Units.
- X-Ray Refrigerating Units.

TEMPRITE PRODUCTS

CORPORATION
47 PIQUETTE AVENUE DETROIT 2, MICHIGAN



YOUR SHARE of the Postwar Store Air Conditioning is on Architects' Drawing Boards—Today

Realizing that customers will be more selective than ever about what they buy and where they buy it, astute merchandisers are planning their postwar success today. Air conditioning is a natural and important part of their plans.

Many architects, engineers and air conditioning contractors are at work on such plans. The contractors are important members of these "teams." They bring valuable practical experience to the task of planning America's commercial future. Undoubtedly you, too, are at work on your share of tomorrow's commercial and industrial building.

Westinghouse Air Conditioning Contractors find it practical to serve on this building "team." For the line of Westinghouse equipment is well established, backed, as it is, by years of pioneering research and engineering experience.

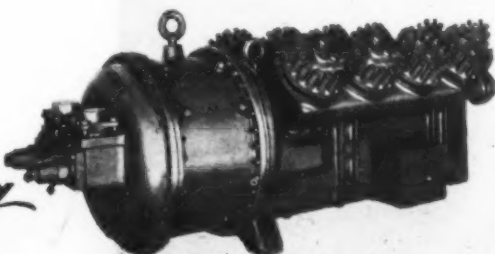
For essential war uses, Westinghouse Air Conditioning and Industrial Refrigeration equipment is available today.

For executives, architects and engineers now planning postwar building and modernization, dependable data and competent engineering assistance are ready.

Phone your nearest Westinghouse office, or write on your letterhead to Westinghouse Electric Elevator Company, 150 Pacific Avenue, Jersey City 4, New Jersey.

HERMETICALLY-SEALED FOR DEPENDABILITY

Westinghouse pioneered the Hermetically-Sealed Compressor. Hermetically-sealed means light weight • small size • low maintenance and operating costs • high efficiency • long life.



Westinghouse
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Air Conditioning

WESTINGHOUSE PRESENTS JOHN CHARLES THOMAS • SUNDAY 2:30 EWT., N.B.C. • "TOP OF THE EVENING" • MON. WED. FRI. 10:15 EWT., BLUE NET.

DON'T LET Postwar Business slip through your fingers

BE READY TO TAKE CARE OF ALL COMMERCIAL REFRIGERATION NEEDS just as soon as the green light says "GO!"

The complete Sherer line—freezers and display refrigerators of all kinds will be available when restrictions are removed. Reach-in refrigerators and walk-in cooling rooms, as well as the Sherer distribution franchise, are available now! Write or wire today.

SHERER-GILLETT COMPANY
MARSHALL, MICHIGAN



Henry Diaphragm Relief Valve

For Instantaneous Pressure Relief with Fast and Positive Reseating

Design of this relief valve is unique in that it incorporates a diaphragm construction with an unusual seating arrangement. The result is an opening and closing snap-action movement. Large surface area of the pressure actuated diaphragm causes instantaneous relief as compared to gradual opening in conventional spring loaded relief valves. When the pressure in a system reaches the relief point, wire drawing, which may ruin a valve seat, can not take place because there is no slow movement of the valve seat disc in the Henry Diaphragm Relief Valve.

This valve is recommended for protection to a system containing a large charge of freon or methyl chloride refrigerant. It may be employed either for relieving high side or low side to atmosphere. It can also be installed so as to relieve from high to low side of system. It meets the requirements of all existing safety codes. Due to its acknowledged efficiency through dependable performance under all conditions of service, the Henry Diaphragm Relief Valve is today widely used in refrigeration and air conditioning installations of the Army, Navy and Maritime Commission.

The Henry Diaphragm Relief Valve is available in 1/2" F.P.T., 3/4" F.P.T., 5/8" O.D. and 7/8" O.D. Solder connections and at pressures ranging from 90 pounds to 300 pounds per square inch. Each valve is individually adjusted, set at pressures ordered and marked with its rated free air passage capacity per minute. Locking device prevents tampering with pressure setting or changes in setting due to vibration.



FOR FREON AND METHYL CHLORIDE REFRIGERANTS

Type 542. With solder connections. Extended tube sockets at inlet and outlet ports prevent transfer of installation heat to internal parts.



Type 541. With female pipe thread connections.



Henry Products
Are Sold by Leading Jobbers
Everywhere



HENRY VALVE CO.

3260 West Grand Avenue, Chicago 51, Illinois

EXPORT DEPARTMENT, 13 EAST 40TH ST., NEW YORK, N. Y.

Broad Use of Television Will Come Quickly Once Standards Are Set, Says Philco Official

PHILADELPHIA—Once standards have been set by the Federal Communications Commission, every major city in the United States will have a television station just as quickly as transmitter deliveries can be made at the end of the war, it was predicted last week by James H. Carmine, vice president in charge of merchandising for Philco Corp., in an address on television before the Poor Richard Club at the Franklin Institute.

It may be possible to produce and sell table model television receivers for as little as \$125 after the war, Mr. Carmine said. Larger "projection-type" sets, giving a picture 24 inches by 18 inches may cost up to \$400, he indicated.

A New York to Philadelphia television relay transmitter link connecting the two cities for video broadcasts was officially dedicated during the Meeting, with Eddie Cantor and Nora Martin putting on a special performance in New York, which the audience here saw via the link. This new link, installed at Mt. Rose, N. J., which supersedes previous experimental installations, marks the first regularly scheduled commercial television relay system in the country. It will be in operation every Monday night to make the New York programs of WNBT available to the viewing audience of Philco Station WPTZ in Philadelphia.

"Similar links, constructed at a cost of about \$15,000 each and located approximately 50 miles apart,

may well form the basis for a nationwide television system in the post-war years," Mr. Carmine said.

"Television broadcasting facilities today are within reach of approximately 25,000,000 people, provided receivers were available. If, as we expect, at least 42 more television stations are added in key cities in the immediate post-war period to the nine now in operation, the coverage would expand to about 70,000,000—or more than half the population of the United States.

"The next step will be for television to fan out from the key cities into smaller communities via relay links and network hook-ups. Later, through relays or coaxial cables the stations will probably be joined into national chains, which will allow the television audience all over the country to see as well as hear their favorite stars and political leaders, and to witness the great news events of the world passing before their eyes."

Among the major Philco developments demonstrated to the Poor Richard Club was the "Plane-O-Scope," a new kind of picture tube with a completely flat surface, which allows the television picture to be viewed from any angle, avoids the distortion characteristic of all older-type bulbous tubes, and eliminates light reflections.

Mr. Carmine also explained a Philco invention known as the "ion-trap" which removes the ion blemish from the screen of the picture tube.

San Diego Dealers Tell What's Needed For Clean, Profitable Appliance Business

Manufacturers' Representatives Say Distribution Setup Won't Change Much

SAN DIEGO, Calif.—More than 225 dealers, repair shop operators, distributors, representatives of manufacturers, and other electrical industry personnel jammed the auditorium for the annual spring conference of the Bureau of Radio and Electrical Appliances of San Diego County held here the afternoon and evening of May 19.

Those at the conference heard the recommendations of the Bureau's Planning Committee, which has been studying all phases of appliance merchandising; learned the postwar distribution plans of many appliance and radio manufacturers; were informed of the local utility's merchandising policy; examined the Bureau's advertising activities; participated in a "Selling Clinic"; and saw a demonstration of future possibilities for light and electronics.

After months of study, the 25-man Planning Committee, headed by Frank Guasti, announced numerous suggestions for manufacturers, distributors, dealers, and service operators. Complete text of the report is published on succeeding pages, but here are a few highlights of the report:

"Manufacturers or distributors are urged where possible to

franchise some firm which is already in business and may have been engaged to some extent in appliance selling or servicing, rather than to encourage the establishment of an entirely new business in the community.

"Clarification of (manufacturers' guarantee and warranty policies), is strongly urged to insure a full understanding by the purchaser of the limitations of these policies.

LIMITED LIABILITY ASKED

"Limitation of the dealer's liability in connection with major appliance guarantees is recommended.

"Manufacturers and distributors are urged to refrain insofar as possible from granting franchises to cooperatives which offer competition by way of price concessions, or rebates which constitute a discount.

"Distributors who allow unauthorized individuals to purchase appliances 'over the counter' are endangering price maintenance."

Premiums and discounts by dealers are opposed, except on multiple sales to apartment houses.

A uniform policy on "90-day cash" sales is needed.

Trade-in allowances, which should not be inflated, ought to be based on the "market resale value of the appliance in question, less cost of reconditioning if any, total overhead connected with its sale, and a fair net profit to the dealer."

"No misleading statements should be included in connection with any appliance advertising copy."

DON'T COMPETE ON WAGES

"Competition between stores of the same class as to percentage or amount of compensation for appliance salesmen is recognized as a practice which could lead to labor piracy and to unwarranted selling expense."

Uniformity in charges for servicing is recommended, as the hiring of efficient technical men of high calibre; free servicing beyond the guarantee or warranty is opposed; and "the schedule of payment for efficient technical service men should be approximately one half of the service charges, plus car allowances charged the customer."

In presenting this report, Committee Chairman Guasti pointed out that this report was not to be considered final, but only as the recommendations developed to date. The conference voted to continue this planning committee with all members of the San Diego Bureau participating.

During the "Manufacturer-Distributor" discussion of plans and policies for future appliance dis-

tribution in the San Diego territory, which followed the report of the planning committee, Bureau members heard several announcements from manufacturers regarding post-war moves along this line.

THE PRODUCER'S VIEWPOINT

Most major appliance manufacturers and distributors contemplate no changes in their distribution setup following the war, it was learned, but factory distribution outlets are planned for San Diego by Thor Pacific Co., announced John Gundersen, manager, and Packard-Bell Radio Mfg. Co., according to W. Lowell Wood, plant manager.

Chris Griffin, manager of General Electric Co.'s newly established factory branch in San Diego, outlined his company's policies, while Burt Dorris, Pacific Coast manager for Stromberg-Carlson Radio & Telephone Mfg. Co., described his company's new direct dealer sales policy as contrasted with the former independent distributorship setup. Hoffman Radio Corp., a war-born manufacturer of radio and electronics equipment, will enter the domestic radio field after the war, revealed R. J. McNeely.

J. Clark Chamberlain, secretary-manager of the San Diego Bureau, was in charge of this discussion.

Following dinner, the evening session opened with a presentation of the Bureau's advertising of the past few months, and tentative plans for the future, by Elmer Small, committee chairman, assisted by Forrest M. Raymond, advertising manager of the San Diego Gas & Electric Co.

UTILITY TO STAY OUT

The San Diego utility's policy for future appliance merchandising was then outlined by A. E. Holloway, vice president. In effect, the utility's plan calls for no direct selling of appliances, except for some unforeseen need of promoting appliances or products so new that dealers could not afford to pioneer them, explained Mr. Holloway.

Renewed support of the activities of the Bureau was pledged by Mr. Holloway, and he closed with several specific recommendations for even more aggressive appliance selling in the future.

High point of the evening session was perhaps the "Selling Clinic" which consisted of talks on various phases of impending sales problems presented by five representative industry men: M. G. Sues, vice president of Leo J. Meyberg Co.; Chris Griffin, manager of G-E's new San Diego branch; Burt Dorris, Stromberg-Carlson; H. H. Fogwell, president of Thermador Electrical Mfg. Co.; and E. M. Frellson, G-E Supply district sales manager. E. W. Messer of the Bureau chairmanned the clinic.

An analysis of the business and industrial possibilities of the San Diego area was also presented. Paul A. DuPont, president of the San Diego Bureau, presided at both the afternoon and evening sessions of the conference.

(Text of the report of the San Diego Planning Committee is published on pages 8 and 9.)

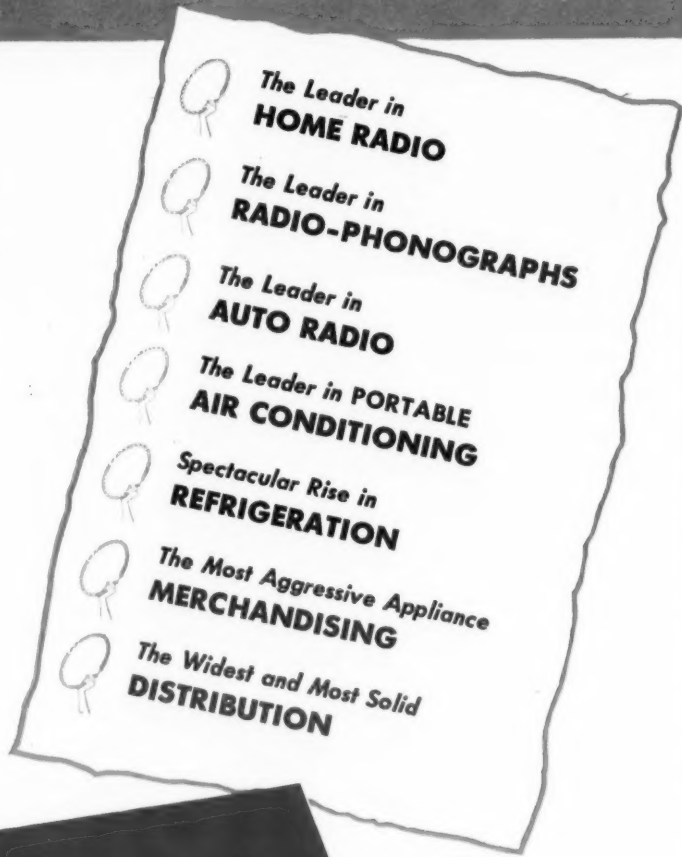
LEADERSHIP

Before the War - THE LEADER FOR 12 STRAIGHT YEARS

In thinking of the future, here's the first and most important fact for every appliance dealer to keep in mind today. For 12 straight years before the war, Philco was the overwhelming leader in its field . . . in engineering, in merchandising, in advertising and promotion, in public acceptance . . . yes, in every essential ingredient of a big-time, consistent, dependable, profitable proposition for the retail merchant.

After Victory - THE GREATER PHILCO OF TOMORROW

Yes, while working for war, Philco LEADERSHIP prepares for peace. A greater Philco is coming . . . born of war research and new merchandising goals. When you weigh your plans for the future, remember the record of Philco leadership. It will bring you your greatest opportunities for profit in the appliance field.



Your Philco Distributor is on the way to tell you the Full Story

Right now, your Philco distributor is making his plans for the Greater Philco of Tomorrow. He'll be seeing you soon with an impressive story, "Your Future with Philco". It's a story you won't want to miss!

PHILCO

CAN'T SAY IT TOO LOUD!



ORDER FROM YOUR JOBBER OR -

EXCLUSIVE NATIONAL DISTRIBUTOR
THE HARRY ALTER CO. 1728 S. MICHIGAN AVE.
CHICAGO 16, ILLINOIS
JOBBER: WRITE FOR SPECIAL PROPOSITION!

New Wartime Booklets Help Maintain Frigidaire Dealers as Refrigeration Headquarters

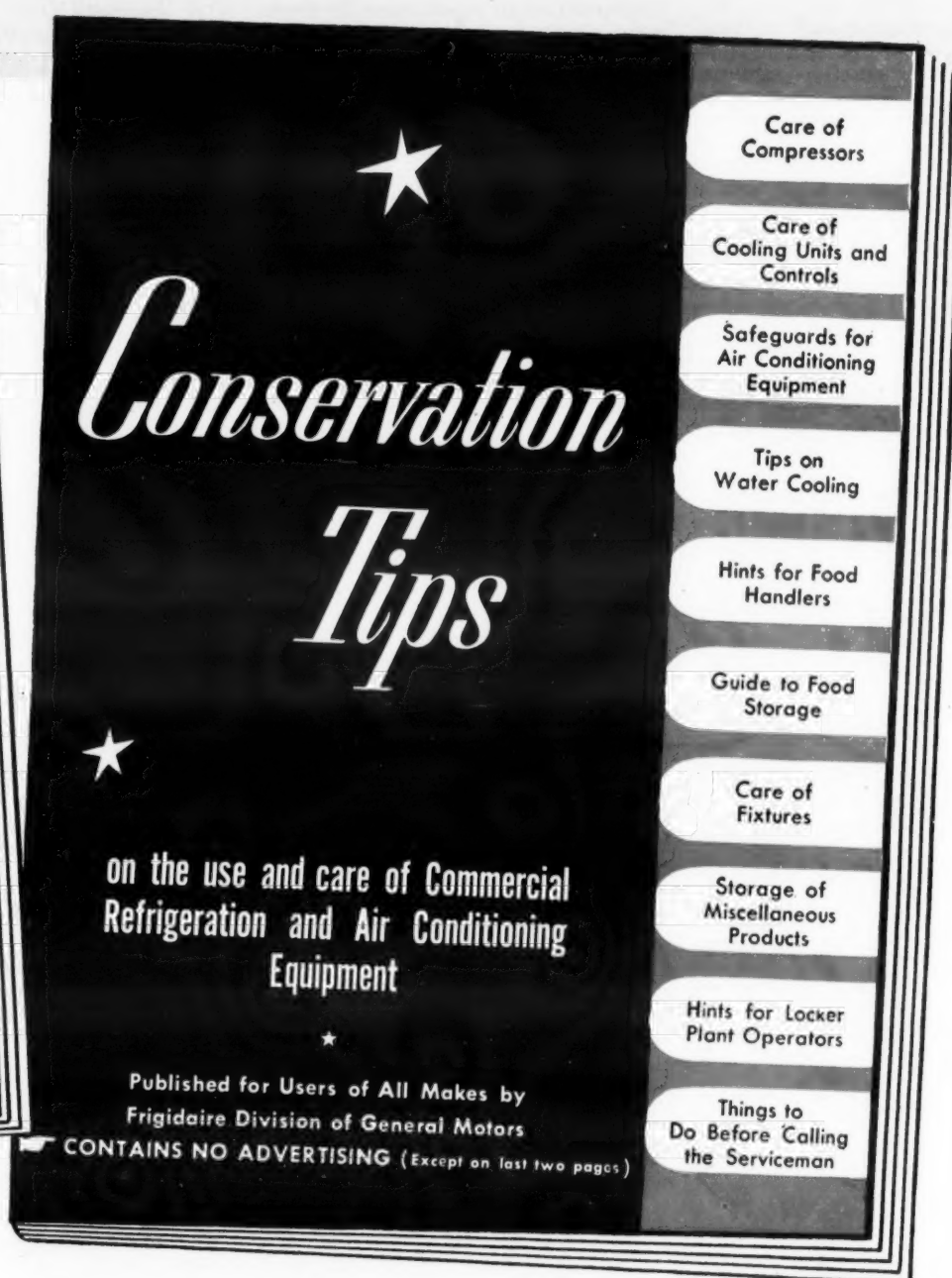


101 REFRIGERATOR HELPS is filled with suggestions about the wartime care of the household refrigerator. CONSERVATION TIPS tells how to get better results; reduce operating cost and upkeep expense; prolong the life of all Commercial Refrigeration and Air Conditioning equipment.

Some of the Ways Frigidaire Dealers* Are Using These FREE Booklets:

- Offering in newspaper advertisements and radio "spot" announcements.
- Mailing to selected store customers.
- Leaving with refrigerator users on service calls.
- Mailing to Frigidaire users.
- Distributing to nutrition classes and cooking schools.
- Mailing to selected lists of apartment and building managers, hospitals, industrial plants, institutions.
- Advertising in store and window displays.
- Distributing to store visitors.
- Distributing through women's clubs, church groups, study clubs, and Parent Teachers Associations.
- Distributing through County Home Demonstration Agents.
- Mailing to employees.
- Supplying to trade associations and similar groups.

*Using these same methods of distributing "Wartime Suggestions"—a companion booklet to "101 Refrigerator Helps"—Frigidaire Dealers placed over 7,000,000 copies in the hands of refrigerator users.



These two new booklets are typical examples of the wartime help Frigidaire Dealers are giving refrigeration users everywhere. They are helping to keep vital refrigeration equipment in operation.

Prepared by Frigidaire, these booklets currently are being distributed to refrigerator users

by Frigidaire Dealers. In this way, Frigidaire Dealers are making a worthwhile contribution towards the protection of America's wartime food supply. At the same time, they are building good will for the future and keeping themselves closely in touch with the refrigeration market.



FRIGIDAIRE

Division of

GENERAL MOTORS

DAYTON 1, OHIO • LEASIDE, ONTARIO

Peacetime builders of

ELECTRIC REFRIGERATORS • RANGES • WATER HEATERS
HOME FREEZERS • ICE CREAM CABINETS
COMMERCIAL REFRIGERATION • AIR CONDITIONERS
BEVERAGE, MILK, AND WATER COOLERS

San Diego Dealers Lash Out at 'Obscure' Guarantees, Franchising of New Dealers, 'Unfair' Practices of Dealers & Distributors

Editor's Note: As reported on page 6, the 25-man Planning Committee of the Bureau of Radio and Electrical Appliances of San Diego County has been studying appliance merchandising methods for several months. Following is the complete text of the committee's recommendations:

1. MANUFACTURER-DISTRIBUTOR RESPONSIBILITIES:

"(a) Manufacturers and distributors are urged to carefully study both the local market possibilities and the present dealer coverage in our territory before considering the franchising of additional outlets. With the prospect of but limited appliance production to begin with it is unlikely that existing dealers will be able to secure all the stock they need. Therefore it seems reasonable to urge limitation of new outlets until all those who have remained in business are properly supplied.

"If new outlets appear necessary, after a study of the existing dealer structure (our mortality has been less than 15%) manufacturers or distributors are urged wherever pos-

sible to franchise some firm which is already in business and may have been engaged to some extent in appliance selling or servicing, rather than to encourage the establishment of an entirely new business in the community. It should be the established policy to so encourage and strengthen the dealers who have remained, so as to insure even a more substantial type of appliance representation than existed before the war.

"(b) Manufacturers and distributors are urged to look for the following qualities in re-establishing appliance franchises or in setting up new accounts: Financial soundness, background or aptitude necessary to success in appliance selling, willingness to maintain adequate stocks and displays, and general business integrity.

"(c) In that guarantee and warranty policies of manufacturers must be administered by distributors and dealers, it should be their privilege to recommend any changes they deem necessary in keeping with sound business principles. Following are such recommendations:

"All manufacturers guarantee and warranty policies are obscure and misleading to the purchaser who generally fails to read the 'fine print' and thus misinterprets what is repre-

sented. Clarification of such wording is strongly urged to insure a full understanding by the purchaser of the limitations of these policies. If this is done, the dealer will have a better opportunity to collect for services the purchaser now thinks were included, but which actually were not covered in the guarantee or warranty.

"Limitation of the dealers liability in connection with major appliance guarantees is recommended. This seems particularly advisable in connection with the five-year refrigerator warranty plan. We do not believe it is necessary to guarantee a refrigerator for longer than one year. If manufacturers insist upon this policy, some financial arrangement should be worked out whereby the dealer is properly remunerated for any calls or service he must make to back up the manufacturers representations.

"(d) Recognizing that the dealer is the most important cog in the program of maintaining customers' appliances, it is recommended that manufacturers and distributors franchise only those firms who either maintain adequate servicing facilities themselves, or who have arranged for such adequate service, otherwise.

"(e) In the past, many manufacturers and distributors have not been greatly concerned in seeing that established prices were maintained by their dealers. In the belief that these agencies should be concerned, it is strongly recommended that a uniform policy be adopted by all manufacturers and distributors in demanding strict adherence by their dealers to the established prices of their products.

2. TRADE DIVERSION EVILS AND THE NEED FOR CORRECTION:

"(a) The cooperative of both the consumer and production-for-use type presents a rapidly growing threat to legitimate appliance retailing as well as to many other businesses. This is true in our own territory where five such organizations are already established through which members may purchase appliances and other such equipment virtually at cost. Agitation is now under way to organize strictly consumer cooperatives within the City of San Diego, in addition to the five already mentioned which are largely of the production-for-use type.

"Cooperatives which enable their members to purchase appliances and other commodities direct, in competition with private business are able to do so because (1) they largely escape taxes, (2) do no advertise, and (3) do no research work to speak of. Their continued growth constitutes a definite threat toward individual initiative and could eventually lead to state socialism.

"Manufacturers and distributors are urged to refrain insofar as possible from granting franchises to cooperatives which offer competition by way of price concessions, or rebates which constitute a discount. It is hoped that legislation to combat this threat against private enterprise might be brought to bear in checking the cooperative movement, but an intelligent presentation of the facts to the public gives promise of the only real avenue to relief.

"(b) Recognizing that cut price competition of any type is injurious to everyone, that it hurts the customer and retailer in the long run just as much as it does the manufacturer and distributor, it is recommended that profits be protected by placing all appliances under 'Fair Trade Contracts' wherever possible.

"(c) Industrial selling, or the 'I' can get it wholesale for you' racket has been outlawed by Trade Diversion Laws in nine states. Recognizing that 'Industrial Selling' and the selling by the 'discount' specialist result in diverting trade from established retail channels, it is recommended that we align ourselves with other trade groups and do all in our power to hasten passage of the 'California Trade Diversion Law,' Assembly Bill No. 1353. Pending the next meeting of the Legislature, manufacturers doing business in our territory are urged to declare themselves now as to their intentions toward industrial buying or the selling to 'discount' houses, so that legitimate dealers may guide themselves in establishing sound product connections.

"(d) Appliance selling through commissary, post exchange, and ship's service is recognized as a longstanding community problem which probably cannot be eliminated. It is therefore urged that all dealers unite on some uniform policy for handling given sales through these agencies to the end that if discounts are necessary, they be kept at a minimum which is fair to the agencies concerned.

"(e) Distributors who allow unauthorized individuals to purchase appliances 'over the counter' are endangering price maintenance. Recognizing that the matter of 'who is entitled to a discount' is one for distributors themselves to determine, it is strongly recommended that in the interest of all dealers, wholesalers should establish and maintain a uniform sales policy with regard to 'over the counter' selling.

"(f) It is strongly recommended that the electrical industry as a whole should do all in its power to urge the government to establish and maintain as a policy, the present tendency to dispose of surplus materials insofar as possible, through legitimate channels, rather than allowing such surplus materials or supplies to get into the hands of speculators. In anticipation of the ultimate release of surplus appliances, it is urged that they be disposed of only through regular established industry channels.

3. FORMER DEALER PRACTICES THAT NEED CORRECTION:

"(a) The following discount policies are recommended: (1) No cash discount should be allowed. (2) No premiums of any type, including

(Concluded on Page 9, Column 1)

EVEN YOUNG CUSTOMERS WANT TO SEE!

WELL DISPLAYED
MERCHANDISE IS

Half-Sold!

PLAN YOUR CASES WITH

Thermopane

What provisions have you made in your postwar cases for Eye Appeal? Before the war, as you know, "Blind Top Cases" were on the way out. Undoubtedly you are making plans now to permit customers to see the merchandise your dealers hope they'll buy.

There's one sure way to obtain Eye Appeal in refrigerated food and frozen food cases—glaze them with THERMOPANE—the patented, factory-built insulating glass unit now offered by Libbey-Owens-Ford.

THERMOPANE assures Clear Vision in any food case... lets customers see what they want to

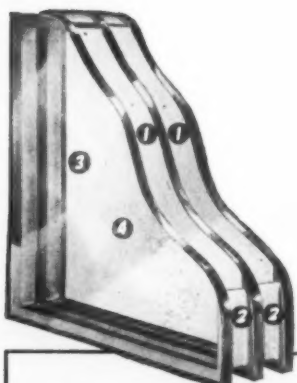
buy! Under normal humidity conditions, interior condensation is eliminated by the dry, captive sealed air. Dust and dirt cannot seep through the strong, patented metal-to-glass *Bondermetic Seal* and get between the panes. And, since THERMOPANE is installed as a complete unit, there are but two glass surfaces to clean.

When you plan your postwar products, check on the many advantages THERMOPANE will give to your equipment. Consult your local glass distributor or write Libbey-Owens-Ford Glass Company, 6064 Nicholas Building, Toledo 3, Ohio.

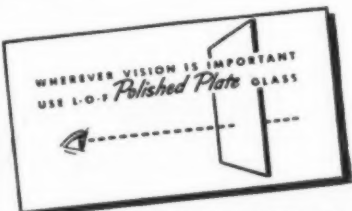
4 IMPORTANT THERMOPANE FEATURES

1. **INSULATING AIR SPACE.** The air inside the Thermopane unit is scientifically cleaned, dried and hermetically sealed. This layer of air gives Thermopane its high insulating efficiency.
2. **BONDERMETIC SEAL.** This patented metal-to-glass seal permanently bonds the two or more panes of glass into a single unit. Amazingly strong, it seals the insulating layer of air against dirt and moisture.
3. **NO FOGGING UP.** Because of the patented *Bondermetic Seal* and the insulation afforded by the sealed-in air space, frosting up and condensation are eliminated on the inner surfaces.
4. **ONLY TWO SURFACES TO CLEAN.** The inner surfaces of Thermopane are specially cleaned at the factory—and always stay clean.

Copyright 1944, Libbey-Owens-Ford Glass Co.



LIBBEY • OWENS • FORD
a Great Name in **GLASS**



Trade Marks Registered



MANHATTAN

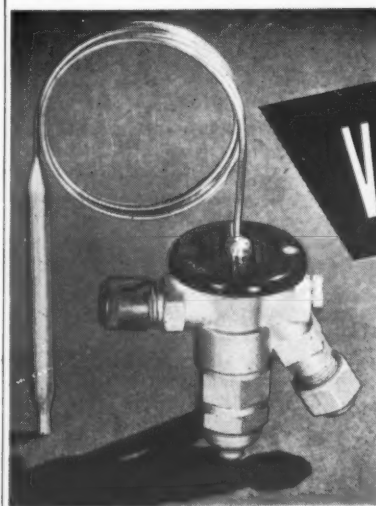
FHP V-BELTS

MORE POWER
Grips the grooves... stops slip—flexible construction for uniform "pull"

LONGER WEAR
Endless cord construction resists internal heat and side wear.

SILENT RUNNING
Smooth running and noiseless on high-speed drives.

THE MANHATTAN RUBBER MFG. DIVISION
of Raybestos-Manhattan, Inc.
Townsend Street Passaic, New Jersey



V-200 THERMAL
EXPANSION
VALVE

Unsurpassed Sensitivity and Dependability

FEATURES

- Readily removed orifice cartridges eliminates necessity for stocking several sizes for low tonnage installations.
- Carefully lapped hard faced ball insures positive tight shut-off.
- Thoroughly field tested.
- Handles freon, methyl chloride, sulphur dioxide.



Write for Catalog 52

GENERAL CONTROLS
801 ALLEN AVENUE • GLENDALE 1, CALIFORNIA
Branches: Boston • New York • Philadelphia • Detroit
Cleveland • Chicago • Dallas • Denver • San Francisco

Uniformity In Many Phases of Dealer Activity Is Theme of San Diego Report

(Concluded from Page 8, Column 5)

trading stamps, which are a form of discount, should be allowed. (3) No discount should be given to any person for any reason, except the following: (4) Apartment house owners or other purchasers of multiple units should be allowed a discount for the reason that ordinarily the expenses connected with such a transaction are less than the proportionate expense on sales of single units. Rate of discount to be determined later.

"(b) In recognition of the practice of some firms of considering a 90-day account as a 'cash sale' while others have charged interest on such transactions, it is recommended that all dealers unite on some uniform policy in connection with such accounts.

"(c) Trade-in allowances, if inflated, amount to giving a discount. Therefore the following procedure is recommended as a uniform policy:

"(1) All trade-in allowances should be based on the market resale value of the appliance in question, less cost of reconditioning if any, total overhead connected with its sale, and a fair net profit to the dealer.

"(2) While it is recommended that no trade-in allowances be made on merchandise other than the type being sold, it is recognized that this policy cannot be made uniform; therefore if such transactions are made, it is recommended that the same formula for allowances as set forth in the preceding point, be used.

"(3) Recognizing that a practice of guaranteeing a definite trade-in amount on the purchase of an electric refrigerator has developed in the present sale of ice boxes, it is strongly recommended that this practice be discontinued as not being in the interest of sound business operations.

"(d) While term selling is controlled by Regulation W, it would appear somewhat futile to establish term selling recommendations. But it is strongly urged that when and if this regulation is revoked, reasonable, uniform policies in keeping with the overall economic situation at the time be uniformly adopted.

"(e) Advertising of appliances should be consistent with merchandising policies. Therefore the following recommendations are urged as uniform procedure in this territory:

"(1) No misleading statements should be included in connection with any appliance advertising copy; if such instances should occur, the efforts of our bureau should be directed as in the past to the closest cooperation with the Better Business Bureau in its efforts to eliminate

unethical and misleading advertising.

"(2) Advertising of trade-in allowances should be general in wording and never specific in amount, nor should a trade-in allowance be included in the net sale price of the advertised merchandise. Examples of approved statement would be 'Liberal trade-in allowance'; examples of unapproved statement, '\$5.00 for your old - - -', or 'Sale Price ... dollars and your old - - -'.

"(f) Competition between stores of the same class as to percentage or amount of compensation for appliance salesmen is recognized as a practice which could lead to labor piracy and to unwarranted selling expense. It is therefore urged that additional study be given to this problem with a view to working out recommended compensation programs which might be reasonably uniform for appliance dealers of similar classifications.

4. APPLIANCE SERVICE POLICIES

"(a) Recognizing the need of establishing policies and practices which might contribute toward the goal of making appliance service 'pay its own way' at all times, the following recommendations are made:

"(1) That only efficient technical men be employed.

"(2) That a listed charge for each item or service be established, with regular profit on parts comparable to national custom, such as 'Radio Mens Service Schedule' for radio service.

"(3) That outside service charges be set to include time away from the store, plus a uniform car allowance.

"(4) That a regular charge be made for all estimates given, away from the place of business; amount to be credited if work awarded.

"(5) That the service department be credited at 10% above cost for all maintenance work performed, other than retail service.

"(b) One of the chief causes preventing service from paying its own way, is the giving of free service

beyond the commitments established by the guaranty or warranty. Therefore it is recommended that:

"(1) Free service should be limited to 30 days beyond actual commitment established by the guaranty or warranty.

"(2) That a special uniform dealer guaranty be adopted, which would be signed in duplicate by the dealer and accepted by the customer as definitely limiting free service beyond the period stated.

"(c) While it is difficult to make uniform recommendations as to the scale of payment for various types of service personnel, and to establish any uniform schedule for car allowances, the following general policy is recommended: That the schedule of payment for efficient technical service men should be approximately one-half of the service charges, plus car allowances charged the customer.

"(d) In recognition of the impending problem of some day having many improperly trained or qualified men attempting to enter the appliance service field, it is recommended that study be given now to the problem of establishing some sort of control of service personnel to the end that the public might be pro-

tected as fully as possible against the hazards of unskilled, improperly equipped personnel who may attempt to do service work in the appliance field."

McKibbin Given New Job by Westinghouse

EAST PITTSBURGH, Pa.—B. W. Clark, vice president of the Westinghouse Electric & Mfg. Co., announces the appointment of John M. McKibbin as assistant to the vice president.

Formerly manager of the company's application data and training department, Mr. McKibbin's new responsibility will include all product and industry advertising, in addition to his present duties.

Joining Westinghouse in 1922, Mr. McKibbin held various positions in advertising work. In 1936 he was named apparatus promotion manager to coordinate all such activities, except those involving Westinghouse merchandising equipment, at headquarters and in district offices. In 1937 he was made head of the application data and training department.

MAINTENANCE TIPS

for users of "FREON-12"

No. 3

EMPTYING CYLINDERS

Today, the importance of completely emptying cylinders of "Freon-12" cannot be overemphasized. Haphazard methods may result in loss or waste of as much as 6% of the total charge as vapor in a standard 145-pound cylinder.

Close observance of the following suggestions will enable you to obtain full weight from every cylinder:



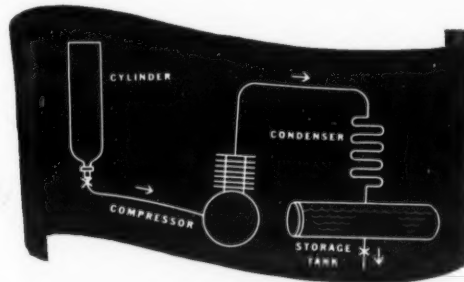
1. Place the "Freon-12" cylinder with hood on scale to obtain gross weight.

2. Remove cylinder from scale and place it in a bucket or barrel of hot water not exceeding 125° F.



3. After cylinder is thoroughly heated to increase pressure, remove from hot bath and invert cylinder. Connect line to valve, open valve and discharge all liquid "Freon-12."

CAUTION: Never subject cylinder filled with compressed gas to a temperature above 125° F. Never permit direct flame to touch the cylinder or fuse plug.



4. Connect the cylinder to the suction line of the compressor and evacuate the cylinder to 28" to 29" of mercury for a period of 20 to 30 minutes. The "Freon-12" vapor removed from the cylinder is compressed and condensed and discharged into a storage container or charging line.

5. When the cylinder is completely evacuated, close the valve tightly, replace hood and again weigh the cylinder.

6. Subtract tare weight from gross weight of cylinder. The difference represents net weight of "Freon-12" removed from the cylinder. Compare net weight with that shown in column 6 of analyses report accompanying each shipment of "Freon-12." This should be 145, 25, 10 or 4, depending upon capacity of the cylinder.

NOTE: If weights differ, evacuation of cylinder is incomplete.



7. If determination shows that evacuation is not complete, repeat operation No. 4.

You can be sure you get all the "Freon-12" you pay for by being certain that every cylinder is completely evacuated before it is returned. Reprints of these suggestions will be sent upon request. Write: Kinetic Chemicals, Inc., Tenth & Market Streets, Wilmington 98, Delaware.

● Please continue to return empty cylinders promptly ●


BUY A WAR BOND EVERY MONTH



Refrigeration is a weapon of war. Air conditioning is essential to many delicate war operations. These two simple truths are reasons to feature Gilmer Belts. Gilmers are rugged, long-lasting and efficient. When customers know that you handle Gilmers, plenty of sales and service opportunities open up of their own accord. Be sure to call your jobber today. He can bring you these fine Gilmer Belts.

Gilmer BELTS

L. H. GILMER COMPANY
Tacoma, Philadelphia 35, Pa.



Don't Let ICE TROUBLES Sabotage Refrigeration

ANSUL ICE-X

gives immediate relief to frozen units. Dissolves formed ice—prevents new ice in expansion valves and capillary tubes. ANSUL ICE-X is equally effective with methyl chloride, acrolein methyl chloride, methylene chloride and all "Freon" refrigerants. Will not react with refrigerants or oil. Leaves no residue. Will not corrode.

Ice-X will not cure troubles caused by wax, sludge, dirt or mechanical difficulties.

SIZES: Pints, quarts, gallons, and handy half-pint size for servicemen.

Safe, easy to use and fully machine tested. Prompt efficient service through an Ansul Jobber near you.

ANSUL CHEMICAL COMPANY
MARINETTE, WISCONSIN
Agents for Kinetic's "Freon-12"

29 Years of Knowing How

FIGHT BY HIS SIDE! BUY MORE WAR BONDS

Service Trades Division of WPB Suggests Plan for Training Appliance Repairmen

WASHINGTON, D. C.—Backing up the efforts of industry and government to train new refrigeration servicemen in order to keep the nation's refrigeration equipment operating, the Service Trades Division of WPB's Office of Civilian Requirement has outlined suggestions for operators of repair shops as to methods of attacking the manpower shortage problem.

Repair shops should form groups in their own communities to promote training programs for appliance repairmen, says Walter R. Moulton of OCR, who prepared the outline. The 10 steps to be taken by repair shops as suggested by OCR, are as follows:

1. CHECK EXISTING TRAINING PROGRAMS

"Determine what local training programs, if any, have been set up or are being set up. If there are any training plans existing, information can be obtained from the sponsors as to the best way to proceed.

2. NEW TRAINING PROGRAM

"The Office of Civilian Requirements field representatives in the regional and district offices of the War Production Board are prepared to help in promoting such a training program. Call on them for assistance.

3. SETTING UP TRAINING PROGRAM

"It is the function of the War

Manpower Commission, Bureau of Training, to organize the planning and setting up of a training program and making other arrangements. The nearest WMC office should be requested to assign a representative to help the local group organize.

4. CONTACT THE HEAD OF THE LOCAL VOCATIONAL SCHOOL

"The head of the local vocational school will arrange for space, and collaborate in securing textbooks and instructors, and will arrange to commence instruction upon completion of plans. The local vocational school is prepared to supervise the instructors and work with them throughout the course. If there is no local vocational school, the superintendent of schools in the community can make the necessary arrangements, the details of which he can secure from the State Director of Vocational Education. Federal funds for vocational training have been made available through the U. S. Office of Education.

5. CONTACT THE COUNTY AGENT

"The Extension service County Agent should always be informed of any training program being planned, and he should be given an opportunity to participate in the planning and conduct of the program. His intimate knowledge of people and conditions in his community will be a valuable contribution to the program. He will also be familiar with the various extension service bulletins published in the state. Many of these bulletins would make excellent textbooks for use in the course and for repairmen's reference after completion of the training course.

"The U. S. D. A. Extension Service have long been leaders in developing organized cooperative activity in rural communities for the dissemination of information and knowledge through practical demonstrations and training programs.

"About 40% of American Farmers now have electrical service, and are vitally interested in the repair and maintenance of electrical appliances and apparatus.

"In many states the extension service has sponsored electrical repair training schools in which farmers learn the fundamentals of maintenance and minor repairs of electrical appliances and apparatus. Major repairs, however, must usually be handled by electrical appliance repair shops.

6. DETERMINE PROGRAM DETAILS

"In coordination with the several foregoing interested parties, a proposed program of the training course should be set up. Subject matter should be determined along with such details as the number of classes, the time of classes, etc. (See Appendix A.)

7. SELECT TEXTBOOKS

"Several possible textbooks are available for use in training. A number of the leading manufacturers of electrical appliances have developed training courses, most of which

are quite broad and well planned. In addition to textbooks, they often include films, charts, etc.

"Certain courses would have limitations covering only such electrical appliances as the individual manufacturer produces. Other manufacturers produce a complete line of appliances and have a repair training course covering all of them. While any manufacturer's course specializes on his own products, the basic principles are generally similar, and manpower trained for any course could readily adapt itself to handling repairs of other manufacturers' products.

"The committee should write or call on distributor representatives of two or more manufacturers requesting that they bring or send samples of their training materials. Selection should be made of such materials as seem appropriate to best meet local needs. The manufacturers' representatives may even go so far as to assist in the training course by presentation of sound films or charts for one or more of the classes.

8. NUMBER OF TRAINEES

"The group should determine how much additional help is required in the repair shops of the community and steps should be taken to recruit at least that number of people to take the training courses.

9. RECRUITING TRAINEES

"Contact the head of the local office of the United States Employment Service. The U.S.E.S. will advertise for the men needed, and will submit them to the repair shops requiring help. The U.S.E.S. will also clear any trainees that the repair shops may have ready to enroll in the course. This is a requirement in all defense areas.

"Sources of additional manpower will be found in men of over draft age, men deferred by physical disabilities, women, and professional people who are interested in contributing to the war effort and who can work part time. Special emphasis should be placed on the opportunities for returning veterans to learn a new vocation having assurance of stability. Many veterans have acquired new skills in the armed services which can readily be adapted to this industry.

10. EMPLOYMENT OF TRAINEES

"It is recommended that the repair shops actually place trainees on their payrolls and provide "on the job" instruction during the period of training, in order that they may obtain practical experience during the period of training, and thus make more rapid progress. These trainees should have the further assurance of employment as a repairman at a specified wage upon satisfactory completion of the training course.

"The above training plan, if energetically promoted and followed through, will produce a valuable addition to the manpower in electrical appliance repair shops in any community. The outline of the steps to be followed is based upon actual experience of programs which have

(Concluded on Page 11, Column 1)

RIGHT HERE

IS WHERE YOU GET
YOUR MONEY'S
WORTH OF SKILL!

One of the most important steps in the manufacture of White-Rodgers Controls is the final step—the thorough testing of each control upon completion. Ingenious testing

apparatus, designed by the men who developed the controls and know the requirements they must meet, qualifies the performance promises made on our products.

One of these tests is illustrated above—pressure controls being tested for accurate calibration and positive contact action—determining factors in the life and accurate performance of the control

That is why—when you specify White-Rodgers Controls for your equipment—you know that they will give the dependable and accurate service so necessary to assure the dependability of your product.



**WHITE-RODGERS
ELECTRIC CO.**

1211F Cass Ave.

St. Louis, Mo.

8 EXCLUSIVE FEATURES OF WHITE-RODGERS HYDRAULIC-ACTION TEMPERATURE CONTROLS

1. May be mounted at any angle or position, above, below or on level with control point.
2. Hydraulic-Action Principle incorporating solid-liquid filled bulb and capillary provides expansion force comparable to that of a metal bar.
3. Diaphragm motion uniform per degree of temperature change.
4. Power of solid-liquid charge permits unusually sturdy switch construction resulting in positive contact closure.
5. Heavier, longer-wearing parts are possible because of unlimited power.
6. Dials are evenly and accurately calibrated over their entire range because of straight-line expansion.
7. Controls with remote bulb and capillary are not sensitive to change in room temperature. Accuracy of control is not affected by temperature changes in surrounding area.
8. Not affected by atmospheric pressure. Works accurately at sea level or in the stratosphere without compensation or adjustment.



Controls for Refrigeration • Heating • Air-Conditioning

If you are an experienced . . .

REFRIGERATION APPLICATION ENGINEER

Looking Ahead to Advantageous
Post-War Possibilities, We'd
Like To Hear From You.

Specifically, war and post-war expansion plans of a leading refrigerating products manufacturer call for **ANOTHER** experienced Application Engineer. This man probably is 35-40; with a broad background in commercial refrigeration, and interested in an especially advantageous post-war set-up. Tell us about yourself, including draft status, experience, when available, salary requirements. Information strictly confidential. Address Box 1558, Air Conditioning & Refrigeration News.

Suggested Training Program Outlined for Appliance Shops

(Concluded from Page 10, Column 5) been promoted and successfully carried through in a number of cities."

APPENDIX A

Suggested Outline

ELECTRICAL APPLIANCE REPAIRMEN TRAINING COURSE

Part Subject—

1. Scope of the Business
Electrical Appliances and their use.
Fundamentals of Electricity.
Application for Heat.
Application for Power.
Tools and Their Use.
Safety.
 2. Lighting Equipment
Permanently Installed Lighting.
Portable Lighting.
Circuits and Controls.
Maintenance Repairs.
 3. Small Electrical Heating Appliances
Various Types and Use.
Care, Maintenance, and Repairs.
 4. Fractional Horsepower Motors
Principle of Operation.
Types of Motors.
Simple Care, Maintenance, and Repairs.
 5. Vacuum Cleaners
Principles of Operation.
Types of Cleaners.
Maintenance and Repair.
 6. Washing Machines
Types and Principles of Operation.
Fundamental Operations Care.
Mechanical Maintenance & Repair.
Electrical Maintenance & Repair.
 7. Ironers, Fans, and Mixers
Types of each Appliance.
Principles of Operation and Use.
Operating Care & Maintenance.
Repairs.
 8. Electric Ranges
Principles of Operation.
Major Parts and Use.
Operating Care and Maintenance.
Repairs.
 9. Refrigerators
Principles of Operation.
Major Parts and Use.
Operating Care and Maintenance.
Simple Repairs.
(Major Adjustments and Repairs by Refrigerator Expert only.)
 10. Radios
Principles of Operation.
Major Parts.
Operating Care.
Simple Repairs.
(Major Adjustments, Tests, and Repairs by Radio Specialists Only.)
- Classroom.** Any suitable room of sufficient size for the number of trainees, with proper chairs (preferably with side arms, tables, or desks), good light, heat, and ventilation will serve as a classroom.
- Make sure to have a large blackboard, chalk, and eraser available.**
- Textbooks.** Textbooks should be selected and obtained before starting course.
- Demonstration Equipment.** Actual tools, appliances, motors, cords, etc., to be discussed should be in the classroom for the subject covered.
- Review and Test.** At the end of each session there should be a review of the important features and test questions should be answered by trainees to determine progress of the trainees.
- Records.** A record should be kept of the attendance by individual trainees; also of progress made by them individually.

The Yanks Must Have Their Refrigerators Even If They Have To Make Them Out of Packing Crates Even an Ice Cream Freezer Is Improvised By Group In India

SOMEWHERE IN INDIA—Faced with a major problem in food preservation due to lack of refrigeration in this hot country, officers and enlisted men in the U. S. Army here practically rebuilt a broken-down ice and cold storage plant and converted airplane crates into insulated truck bodies for transportation of food. And there were no Quartermaster Refrigeration companies in the theater to supply specialists for the job.

First job tackled by the squad of mechanics chosen from the ranks was to provide refrigerated storage and transportation facilities, for if these were lacking there would be little point to repairing the ice plant, they reasoned. Unused airplane crates supplied the answer. Bolted to truck frames and lined with cork, the crates provided satisfactory storage space, the Army reports. Alterations were made in the cold storage room of the ice plant to permit pre-

cooling of the trucks.

The task of repairing the ice plant finally evolved itself into a virtually complete rebuilding job. Many of the coils were useless and had to be replaced with banks of new coils which were built on the spot. New water cooling towers were constructed, while all the Diesels were overhauled, some requiring installation of new parts.

In addition to lining all the ceilings and some of the walls with cork, the soldiers installed false wooden ceilings in the cold storage room to reduce the amount of air space to be cooled. A loading platform was built and a road constructed up to the platform. An overall paint job and installation of lavatories and showers completed the task.

An electrically operated ice cream freezer, this also improvised from materials on hand, was later built for the ice plant.

Some Stockholders Of York Ask For Higher Valuation

YORK, Pa.—For the first half of the current fiscal year ending March 31, 1944, York Corp. reports earnings of \$1,541,570 before income and excess profits taxes estimated at \$1,168,000, an estimated net profit of \$373,570. This compares with earnings of \$877,864 for the first half of the previous year before income and excess profits taxes of \$622,230, and a net profit of \$255,634, adjusted to parallel present practice regarding time of establishment of certain reserves.

The estimate for 1944 results from completed sales and partly completed contracts on which proportionate share of profit is taken amounting to a total of \$17,337,294 and compares with \$14,202,278 on the same basis for the first half of the previous year.

Orders booked were \$20,001,024 compared with \$15,294,594 for the same period last year. Incomplete

orders not included in sales, \$25,489,316, after reduction of \$1,858,120 due to cancellations and sales price redetermination during the six months, compared with \$28,842,316 a year ago. Approximately 88% of these orders covered applications of mechanical cooling related directly or indirectly to the war effort. The remaining 12% involved production of war material components for Navy ordnance, aircraft and Army ordnance.

According to S. E. Lauer, president, the majority of the appraisers selected to value 1,894 of the 2,094 York Ice Machinery Corp. preferred shares that dissented from the merger and demanded payment in cash for the value of their shares, found such shares to have a value of \$90 each at the time of the merger. Most of these dissenting stockholders subsequently brought an action in the U. S. District Court to have the appraisers' award declared invalid and have a decree entered finding the value to be \$197.50 per share. The corporation is about to make a motion for the dismissal of this complaint, Mr. Lauer says. There had been some opposition to the merger before it finally was okayed.

AMCOIL FOOD CONDITIONER

IT'S NEW IT'S DIFFERENT *It Combines*

Cooling Temperatures of 35° to 40° F.
And High, Controlled Humidities Up to 93%

THE AMCOIL FOOD CONDITIONER is designed for use in Walk-In Boxes. The function of this new unit is to cool air and control high humidities, in that way preserve and save foods by eliminating dehydration. It is especially engineered for the preservation of

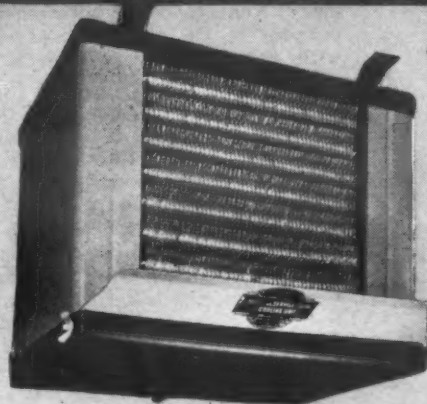
| | | |
|---------------------|-----------------|-------------------------|
| FRESH MEATS | BUTTER & CHEESE | BAKERY PRODUCTS |
| FRUITS & VEGETABLES | EGG STORAGE | CONFECTIONERS' PRODUCTS |
| PERISHABLE FOODS | FLOWERS | DOUGH RETARDING |



ARE YOU GETTING YOUR SHARE?

Recently published figures of the W. P. B. Task Committee show that the sales of commercial refrigeration equipment for replacement during 1944 will exceed \$100,000,000 in retail sales value.

ALSO AVAILABLE NOW

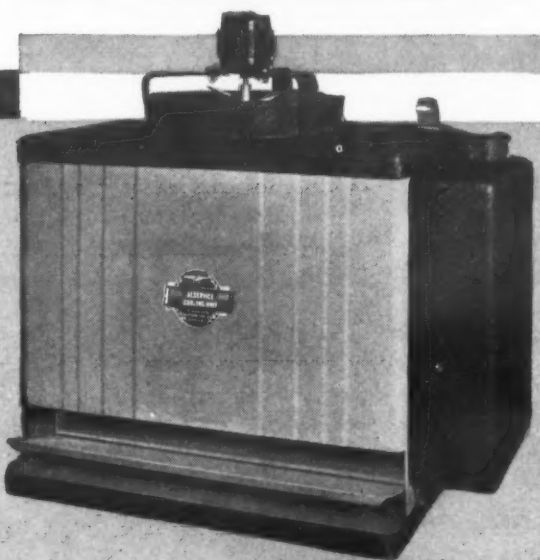


AMCOIL ALSERVICE OPENFACE COOLING UNIT

Is of standard design and serves as a general utility unit in preserving supplies and is used wherever a forced draft cooling unit is required. Temperatures down to 34° F.

AMCOIL ALSERVICE WALL MOUNTED COOLING UNIT

For use where dehydration is not a factor. Temperatures down to 34° F. It embodies some new principles of refrigeration developed by Amcoil Engineers.



These Amcoil units can be delivered now as replacement equipment on rated orders of AA5 or better under I-38. They are made of the best materials, are Amcoil engineered and embody the engineering skill and experience gained in the manufacture of cabinets for testing war products under varying humidities and temperatures from -100° to +160° F.



AMERICAN COILS CO.

25-27 LEXINGTON STREET • NEWARK, 5 N. J.

Factory Representatives

P. J. Burrill • 800 North Clark St., Chicago, Ill.

Franklin G. Slagel • 1501-1509 W. 8th St., Los Angeles, Calif.

ORDER NOW FOR IMMEDIATE SHIPMENT FROM YOUR LOCAL JOBBER OR DIRECT FROM US

Filtrine
HIGH EFFICIENCY
WATER COOLERS

for
War Plant Cafeterias
Army and Navy Mess Halls
Hospitals

Bottlers
and CABINET MODELS
QUICK SHIPMENT
Forty years of experience in building special cooling equipment.
Send for complete catalog.

FILTRINE MANUFACTURING CO.
Brooklyn 5, N. Y.



In the 'Post-War Plans' of Many Farm Families

The BEN-HUR Farm Locker Plant

Talk to any farmer about a farm locker plant and his first comment will be, "wish we had it now." And he'll follow with the promise that food freezing and frozen storage is the FIRST thing he's going to add after the war.

For most farmers already know the benefits of owning a BEN-HUR FARM LOCKER PLANT . . . the economy, time, and food saving advantages of freezing and storing farm-grown vegetables, meat, poultry for delicious meal variety weeks and months later.

This is evidence of your future market for new BEN-HUR FARM LOCKER PLANTS—a volume market ready just as soon as they can be produced.

Let us put your name on the list to receive complete data and sales information on BEN-HUR FARM LOCKER PLANTS, when this data can be released.

BEN-HUR MANUFACTURING CO.
634 E. Keefe Ave. Milwaukee 12, Wis.

Remember . . .



Today . . . Back Our Fighting Men with MORE War Bonds

BEN-HUR FARM LOCKER PLANTS

Inside Dope

By George F. Taubeneck

(Concluded from Page 1, Column 1) take to the air—will help topple over the Axis powers.

The new Allison has twice the piston displacement of the 12-cylinder engine now found in the P-38 Lightning, the A-36 Invader, and other American planes. It has four banks of six cylinders in a W-shape. A novel two-crankshaft arrangement eliminates torque in the plane.

Not only does the new Allison require little more frontal area than the 12-cylinder design, but it also achieves a remarkable decrease in weight per horsepower, which already had gone below the pound-per-horsepower goal.

Most important of all, 97% of the parts for the new engine are interchangeable with those of the former Allison. This assures early quantity production, plus a simple repair situation on the fighting fronts.

It's all a great feather in the cap of Ed Newill, Allison's general manager. While at Frigidaire Mr. Newill became one of the industry's best liked and most respected figures. We're all mighty proud of his record at Allison.

You can see his fine hand in that parts-interchangeability situation, plus the fact that the design allows for installation in multiples in gigantic new planes of the future.

Prepare for Peace

For some time the NEWS has been warning that the arrival of peace is likely to be a shock with many of the characteristics of that which followed Pearl Harbor.

There are those who hold that while the war is on we should think of nothing else. There are others who realize that unless business plans now for peace, we'll be in one helluva mess when it does come.

If we don't minimize that shock, we're likely to find ourselves a fascist state, in which case we'll have lost the war no matter how well or thoroughly the armed forces have done their job.

What Business Leaders Think

That responsible business executives are giving careful thought to problems of the peace—and not just sitting by, nervously wringing their hands waiting for the outcome of events over which they have no control—is indicated by a recent survey of business leaders conducted by the Guaranty Trust Co. of New York.

Interesting and noteworthy excerpts from a summarization of this survey follow:

"It is recognized that the readjustment to peacetime conditions will not be easy and cannot be achieved overnight.

"There is strong insistence, however, on the fact that revision of public policy must go beyond the mere abolition of war controls if free enterprise is to retain its vitality and make its full contribution to the general welfare in the years to come. Such revision must include reform of tax policy, with special emphasis on the restoration of the incentive to enterprise and risk.

"It must aim at clarification and rectification of the relations between labor and management. It must seek a reversal of the recent trend toward extension of political power, particularly in the business field.

"One of its objectives must be the preservation of the resourcefulness of the individual citizen. Underlying these aims, there must be a basic conception of government as the representative and servant of all the people, not the champion of special groups.

"The preponderance of business opinion supports the following views concerning the relaxation and abolition of wartime controls: 1. Some additional materials for civilian supply should be made available at once; 2. The excess profits tax should be abolished promptly at the end of the war; 3. Price control should continue through the reconversion period; and 4. None of the Government's wartime controls should be retained indefinitely.

"Perhaps the most significant fact brought out by the answers to our first question, 'What particular Government policies are most dangerous to the future health and usefulness of your industry?' is that the large majority of business men are primarily concerned not with conditions peculiar to their own industries but with those affecting business as a whole.

"Foremost among these is the fiscal position of the Government, and particularly the outlook for taxes. Anxiety on this score arises partly from the tremendous burden of taxation that business has carried in recent years and will probably have to continue to carry after the war, and partly from the belief that tax policy as it has developed in the last decade or more rests with undue severity on business enterprise and threatens the productivity of our industrial system.

"The principal indictment of Federal tax policy is that it tends to dry up the sources of capital and deaden the incentive to enterprise. A typical comment is: 'The present tax system on corporations and individuals largely confiscates the savings that normally are available for investment in business enterprises. It is the owners of this capital that are normally willing to assume the business risks which are essential to free enterprise and an expanding economy.'

"The replies indicate considerable interest in the proposed Constitutional amendment to limit the taxing power of the Federal Government in times of peace to 25% of income.

"One says, 'I do not think the free enterprise system is safe unless a Constitutional amendment can be passed limiting the power of the Federal Government to levy income and excess profits taxes, except in time of war, to a maximum of 25%. It has been said that the power to tax is the power to destroy, and we have certainly seen the results of this very thing in the last few years.'

"Second in importance to fiscal policy, in the opinion of business men, is labor policy. A considerable number, in fact, put labor policy first. Among these is an executive who says that 'the decided prejudice of Government agencies in favor of labor, with apparent disregard of the effects of the policies followed on the economy as a whole, has already infringed materially upon the long-standing prerogatives of management and constitute a serious threat to the revitalization of free enterprise.'

"Almost as serious as the labor problem, in the opinion of business men, is the centralization of power in the Federal Government, and particularly in its administrative bureaus and agencies. 'The most dangerous present-day policy,' according to one executive, 'is that of extending administrative laws and powers in the fields of regulation and placing the enforcement of those administrative powers outside the regular courts.'

"Another believes that 'our major problem lies in the manner in which controls are promulgated and administered. We have so far departed from our traditions that controls are being created and administered by scores of executive agencies having little accountability to the people whose lives and property are affected thereby.'

"A third heads his list of dangerous policies with 'governmental control of industry by bureaucratic authority rather than by public law.'

"Many correspondents lay primary emphasis on the tendency toward regimentation, or narrowing of the scope of individual initiative. One, referring to wartime controls, says: 'It is our realization that many of these controls parallel the pre-war objectives of the Administration that causes our apprehension as to whether these controls will be promptly relaxed or abolished when the wartime need for them no longer prevails.'

"Closely related to the centralization of authority and the regimentation of economic life is the drift toward paternalism in the relation between the Government and the citizen, a trend that is vigorously criticized by a number of business men. 'One of the most unfortunate things brought about by government,' in the opinion of one executive, 'is the inducement to people generally to depend on it and look to it for all kinds of guidance and support. America wasn't made a great nation that way.'

"Another correspondent states the case in this way: 'Equitable regulations that balance the rights and opportunities of the several economic groups, that place government in the position of umpire instead of manager, and that provide freedom for the exercise of individual initiative, and permit retention of gains by successful risk bearers, represent objectives which must be sought.'

ALL IN ONE PACKAGE!

Saving You Money, Time, Trouble

An Open Acknowledgment of the Importance of the REFRIGERATION JOBBER

Refrigerants
Units
Valves
Fittings
Tubing
Switches
Tools
Other Items
"Know How"

From Hundreds of Manufacturers

To Thousands of Dealers and Service Engineers

Now playing a vital, patriotic role in war conservation and distribution, though short of men and materials, the refrigeration jobber has always been an invaluable part of this industry. Here are just a few of the reasons why he deserves your confidence and support:

Provides a convenient, local "one stop" warehouse for equipment, parts, tools, even advice.

Prices are no higher, sometimes lower, due to quantity shipments and exact data.

In better position to extend credit convenience where needed.

Valuable knowledge of correct installation procedure which is free for the asking and worth many dollars.



A "know-how" that gets the right

material from the right maker to the right job in the shortest possible time.

In close touch with customers. Knows their needs and can quickly acquaint them with new items, new methods, changes in products and prices.

Eliminates the need for heavy stocks carried by service companies

In war time—offering quick spot deliveries of vital equipment; free spot advice on government regulations.



ALCO VALVE COMPANY—853 Kingsland Avenue, St. Louis, Missouri

Commercial and Domestic REFRIGERATOR HARDWARE



NATIONAL LOCK COMPANY

ROCKFORD, ILLINOIS

Off
Dis

WASH
to disp
by the
the Ar
mission
sold by
Regula
the Su
tration
admin
Altho
lishes
both o
agencie
methods
by the
re-dist
Federal
elsewe
the mat
ing res
agencie
The re
Federal
property
this tim
Maritime
dispose
now pili
the coun
Procur
ury Dep
of consu
struction

U. S.
Office

Region
Conne
Maine
Massa
New H
Rhode
Vermont

Region
Penns
New J
New Y

Region
Dist. of
Delawa
Maryla
North
Virgini

Region
Indiana
Kentuc
Ohio
West V

Region
Illinois
Michig
Minnes
North D
South I
Wiscons

Region
Alabam
Florida
Georgia
Mississ
South C
Tenness

Region
Arkansa
Louisia
Oklahom
Texas

Region
Iowa
Kansas
Missouri
Nebrask

Region
Colorado
New Mex
Utah
Wyom

Region
Arizona
Californ
Nevada

Region
Idaho
Oregon
Montana
Washing

Official Setup Announced For Disposal of Surplus Material

WASHINGTON, D. C. — Agencies to dispose of surplus property owned by the Federal government, including the Army, Navy, and Maritime Commission, as well as the property to be sold by each are set forth in Regulation No. 1, issued recently by the Surplus War Property Administration, announces W. L. Clayton, administrator.

Although the regulation establishes procedures to be followed by both owning agencies and disposal agencies, it does not deal with the methods and policies to be followed by the disposal agencies, either in re-distributing the property to other Federal agencies or in disposing of it elsewhere. It does not go into the matter of financial and accounting responsibilities of the disposal agencies.

The regulation is applicable to all Federal agencies that own or control property, but is directed primarily at this time to the Army, Navy, and Maritime Commission, who have to dispose of termination inventories now piling up in plants throughout the country, said Mr. Clayton.

Procurement Division of the Treasury Department is slated to dispose of consumer goods, and the Reconstruction Finance Corp. will handle

capital and producer goods. Other disposal agencies include the Maritime Commission, handling maritime property; Navy Department, combat ships or naval auxiliaries; War Food Administration, all surplus food; National Housing Agency, surplus housing property other than that controlled by the Army and Navy; Federal Works Agency, facilities financed by FWA other than those on sites of housing projects; Foreign Economic Administration, all surplus war property outside the continental United States, its territories and possessions.

Electrical appliances, both household and commercial, are to be disposed of by the Treasury's Procurement division, which is also scheduled by the regulation to handle home type laundry equipment, radio broadcast receivers, heating and ventilating controls, household refrigeration controls, and other air conditioning and refrigeration equipment except specifically designated for the Reconstruction Finance Corp.

The RFC is to handle ice making and cold storage plant systems, including components and accessories; industrial refrigeration units; and central station air conditioning systems.

U. S. Treasury Dept. Procurement Division Offices Which Will Handle Disposal of Surplus

Region I
Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

Region II
Pennsylvania
New Jersey
New York

Region III
Dist. of Columbia
Delaware
Maryland
North Carolina
Virginia

Region IV
Indiana
Kentucky
Ohio
West Virginia

Region V
Illinois
Michigan
Minnesota
North Dakota
South Dakota
Wisconsin

Region VI
Alabama
Florida
Georgia
Mississippi
South Carolina
Tennessee

Region VII
Arkansas
Louisiana
Oklahoma
Texas

Region VIII
Iowa
Kansas
Missouri
Nebraska

Region IX
Colorado
New Mexico
Utah
Wyoming

Region X
Arizona
California
Nevada

Region XI
Idaho
Oregon
Montana
Washington

Regional Office
Donald A. Mackay
Regional Director
Procurement Division
U. S. Treasury Department
Park Square Building
Boston 16, Mass.
Phone: Hubbard 2870

F. S. Albrecht
Regional Director
Procurement Division
U. S. Treasury Department
76 Ninth Ave.
New York 11, N. Y.
Phone: Chelsea 38950

J. J. Connor
Regional Director
Procurement Division
U. S. Treasury Department
1229 20th St., N. W.
Washington 25, D. C.
Phone: Executive 6400
Exts. 5035 and 5036

J. H. Little
Regional Director
Procurement Division
U. S. Treasury Department
Faller Bldg., 8th & Walnut Sts.
Cincinnati 14, Ohio
Phone: Parkway 7160

F. A. Mapes
Regional Director
Procurement Division
U. S. Treasury Department
Room 300, 209 S. LaSalle St.
Chicago, 4, Ill.
Phone: Delaware 8300

John D. Tompkins
Regional Director
Procurement Division
U. S. Treasury Department
10 Forsyth St. Building
Atlanta 3, Ga.
Phone: Walnut 5081

Hamilton Morton
Regional Director
Procurement Division
U. S. Treasury Department
609 Neil P. Anderson Building
Fort Worth 2, Tex.
Phone: 2-1287

W. B. Edgar
Regional Director
Procurement Division
U. S. Treasury Department
6th Fl., Porter Building
Kansas City 2, Mo.
Phone: Westport 4903

Alden W. Pool
Regional Director
Procurement Division
U. S. Treasury Department
7th Fl., Exchange Bldg.
1030 15th St.
Denver 2, Colo.
Phone: Keystone 4151

Thomas C. Stephens
Regional Director
Procurement Division
U. S. Treasury Department
335 Fell St.
San Francisco 2, Calif.
Phone: Underhill 1922

Orrin C. Bradeen
Regional Director
Procurement Division
U. S. Treasury Department
2005 Fifth Ave.
Seattle 1, Wash.
Phone: Main 2782

Chief, Property Utilization Division
J. H. Farrell

Fred W. Young

John D. Fox

Edwin J. Dowd

Eric I. King

Burton C. Graham

R. N. Hanson

John C. Crothers

Eugene Cosslett,
Acting

F. G. Moyer

Charles H. Peterson

'Farmers Will Want 20 Cu. Ft. Box After War' Dealer Says

RUSSELLVILLE, Ala.—After the war T. E. Farned of Farned Radio Service of this city expects to sell farmers more 20-foot refrigerators than he sold 8-foot boxes in 1938. That is because, he said, the farmer has learned he needs larger storage capacity for his products.

"Back just a few years ago we sold more 4 and 5-foot boxes to farmers than anything else," said Mr. Farned. Then the 6-foot box gained popularity. Just as the war came on more and more customers were going to the 8-foot box.

"A lot of these fellows who bought the small boxes have found them too small. We dealers are to blame for taking the easy road and selling them, when the customer could have bought a large box at little more money, which would have answered his needs much more completely. We enjoy cheap T.V.A. rates in this territory, so that the increased operating cost of a larger box is not a consideration."

Mr. Farned said the need for a freezing compartment would dictate the demand for larger boxes. Also he said, farmers were raising more products for market including vegetables, fruits, poultry, and eggs, and they need storage equipment for these products from the time they are gathered until they are taken to market.

Figure In Frigidaire Executive Appointments



PAUL H. BRENNAN



HARRY M. KELLEY

These two men figured in a recent alignment of executive personnel at Frigidaire. Mr. Brennan returns to his former position of commercial sales manager, and Mr. Kelley has been appointed to the position of appliance sales manager.

Joseph Simons Announces Supply Firm Personnel

HARTFORD, Conn. — Joseph Simons Co. with headquarters at 26 Ballard Drive, West Hartford, Conn. is in operation as a refrigeration parts and supplies jobber, serving the central Connecticut area principally.

Joseph Simons, owner of the business, was formerly with Marsden & Wasserman Co., and prior to that with Merchant & Evans Co. of Philadelphia. Mr. Simons has just announced that Stanley N. Baldwin is now with his company. Mr. Baldwin has been teaching in the refrigeration course offered at the Connecticut State Trade School and has been with Bauer & Co., local Frigidaire outlet, and also with the Frigidaire factory branch in Boston.

"They're coming along fine"

TO G-E DISTRIBUTORS AND CONTRACTORS

Here is another in the G-E series of advertisements dramatizing new or unusual applications of air conditioning and refrigeration. Addressed to the readers of Time, Newsweek, Business Week and 16 industrial publications, this advertisement will reach thousands of executives in key industries... helping to open new sales opportunities for G-E air conditioning and refrigeration equipment, both in war industry and for postwar applications.

... but a light frost would ruin the whole crop!"

There's one critical period in the manufacture of huge herringbone gears for U.S. cruisers and destroyers when any marked change in temperature—whether heat wave or light frost—might send them to the scrap pile instead of into the fight.

You see, it takes many days to cut teeth for one of these big propulsion gears. And work done in the last hour must be as accurate in results as the very first cut. If, somewhere in the process, a temperature change causes uncontrolled expansion or

contraction of the metal, it becomes impossible to maintain uniform precision.

In this case, G-E air conditioning and industrial refrigeration team up to keep production humming—regardless of weather. Air conditioning maintains uniform temperature in the cutting room. Industrial refrigeration cools the cutting oil. Together they eliminate the temperature hazards and permit precise matching of gears.

For exacting applications like

these, General Electric has developed efficient and dependable air conditioning and refrigeration equipment that provides accurate control of temperature and humidity. Available for war production uses now... it will be available for all uses after the war.

★ BUY WAR BONDS ★

General Electric Company, Air Conditioning and Commercial Refrigeration Divisions, Section 4706, Bloomfield, New Jersey.

Air Conditioning by
GENERAL ELECTRIC

Hear the General Electric Radio Programs: The "G-E ALL-GIRL ORCHESTRA", Sundays, 10 p. m., EWT, N.B.C. "THE WORLD TODAY" News, Every Weekday 6:45 p. m. EWT, CBS

'Honorable Discharge' Will Be Veterans' 'Priority' For Store or Restaurant Units

Dayton Commercial Refrigeration Dealer Payment Plan Will Help Veterans To Set Up In Business

By Ross Potter

DAYTON, Ohio—A postwar plan to back men returning from the armed forces who want to go into business for themselves with whatever commercial refrigeration equipment they may need has been announced for the Morton Show Case Co., of Dayton, by the firm's president, George Sanders.

There are 4,000 vacant stores in southern Ohio formerly occupied by small businessmen who were among the first to go into the services, Mr. Sanders outlined in a telephone conversation from Washington. The situation is the same in defense areas across the country, he pointed out.

"When those boys come back, this company is going to back them to the limit on any refrigeration equipment they may need to use. They won't need any long statements or cosigners," he added. "Nothing but an honorable discharge.

"Financing terms will run probably three years, or longer if they need them," he outlined. "All the new equipment will go first to ex-servicemen. Civilian replacements will come next."

Meanwhile, Mr. Sanders revealed, his company is completing arrangements for the opening of a new branch outlet in Columbus that will be, he claims, the biggest commercial refrigeration outlet in town. It will feature Sherer-Gillett equipment, he said, and will open before the end of June.

The Morton company's Dayton outlet handles restaurant and grocery store commercial equipment made by such firms as Brunner, Leitner, Morton, Sherer-Gillett, and United, but trade-ins have added many other items.

Among them are bars and bar sinks, commercial and farm-size deep freezers, cold salad units, coffee urns, stoves, french fryers, domestic boxes, steam tables, soda fountains, butcher's blocks, and a wealth of small implements ranging from kitchen utensils to tableware.

Because of Dayton's many war workers, restaurant priorities keep most of these items moving, explained Mary Snyder, the firm's secretary and treasurer. After the war they will continue to handle restaurant equipment of the large size, and perhaps chrome furniture, she said.

Servicing is handled separately by an independent contractor, Bud Baesecker. The company finds this system more satisfactory than trying to maintain a service department of its own, and hopes to continue the arrangement after the war. Maxi-

mum guarantee they extend is 90 days.

Installation work is done at night. A recent application of refrigeration never encountered before was met in an order from a local blueprint company. Constant temperatures with proper relative humidity, they had discovered, preserves highly sensitized papers indefinitely.

Hospital's Study of Own Food Poisoning Case Points To Faulty Refrigeration

CHICAGO—How inadequate refrigeration and the misuse of refrigeration facilities can result in mass food poisoning cases has been brought to light in an article "A Case Study In Food Poisoning" published in the March issue of "Hospitals" magazine.

Causes of the infection which resulted in 85 patients and 250 members of the personnel of a Texas hospital becoming ill were found in a chicken salad, and the failure to keep the ingredients of the salad properly refrigerated is pointed out as the likely cause of the infection. Said the report of the investigation:

"... the boiled hens while still hot were piled up in the refrigerator. Such a mass of hot meat must have caused some rise in the temperature of the refrigerator and the deeper or central parts of the meat must have remained warm for some hours—probably 12 hours or more—after the meat was put in the refrigerator."

The article states further:

"Faulty Refrigeration. The air temperature in this refrigerator under usual conditions of operation ranges from 42 to 55° F. with a relative humidity averaging 85%. However, the temperature and humidity of the kitchen air were found so

high that the frequent entrance of this air into the refrigerator results in a large precipitation of moisture on the cooling coils, floor, walls, and exposed surfaces of cooled foods in the refrigerator."

Summary of the case pointed to the part which faulty refrigeration played in the poisoning of more than 300 people as follows:

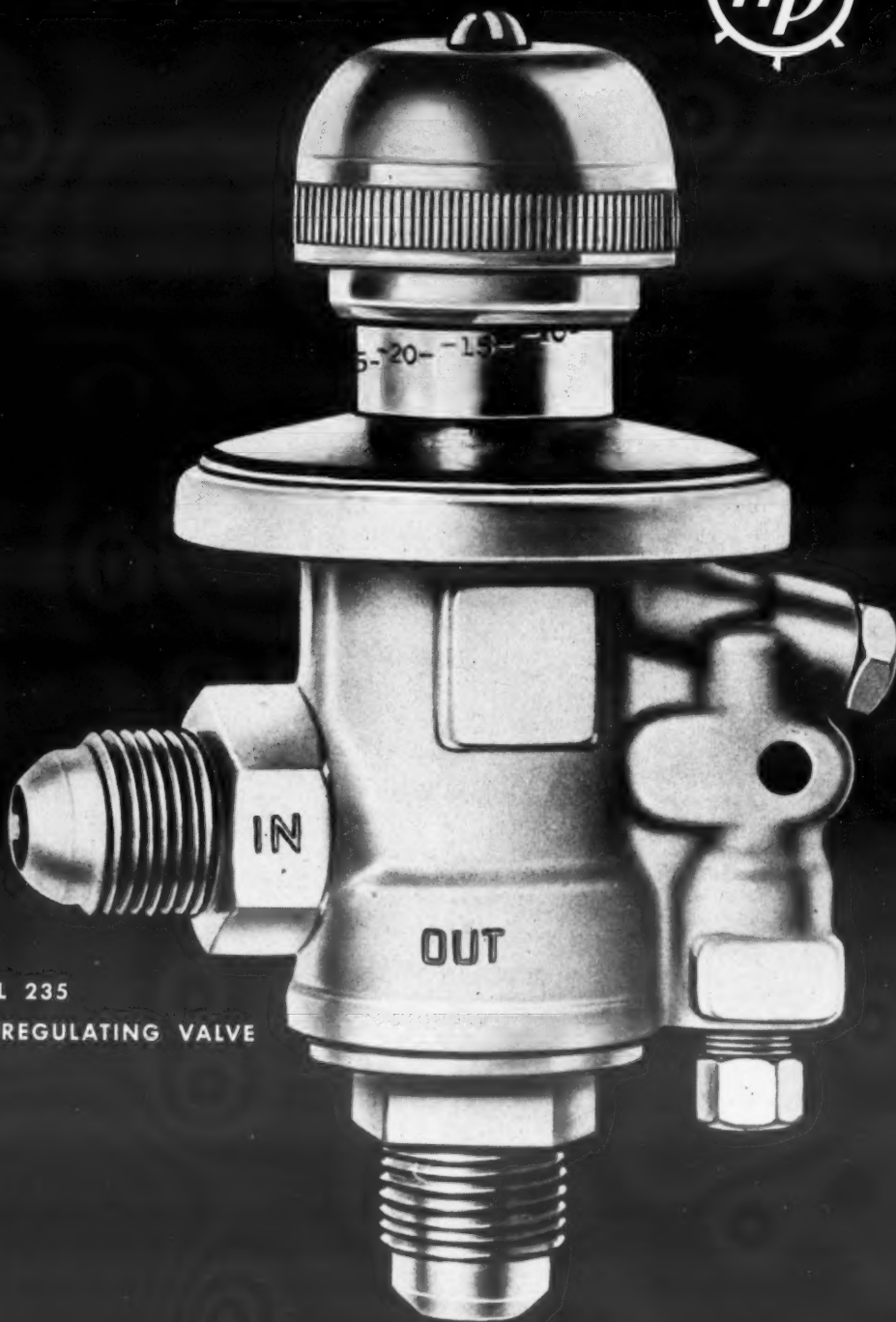
"The laboratory findings of the staphylococci in the bones from which the meat for the salad was removed eliminates the dressing and other items as an important factor in the outbreak.


"The temperature of the refrigerator room in which the large mass of hot chicken was placed for storage with the present inadequate equipment and the mode of operation of the refrigerator, maintained at a sufficiently low degree even under unusual circumstances."



Dependability doesn't happen...

IT'S **BUILT INTO EVERY**  **VALVE**



 **MODEL 235**
SUCTION PRESSURE REGULATING VALVE



USED to regulate pressure at the tail of the evaporator, Model 235 is particularly valuable where two or more evaporators must be operated at different temperatures from a single condensing unit. Maintains evaporator temperature within close limits.

It has a graduated pressure scale, and adjusting range from 10" vacuum to 30 pounds. Furnished complete with shut-off

valve for pressure recording gauge, it can be used on flooded, semi-flooded or dry expansion types, in capacities up to 1/2 ton Freon, or 3/4 ton Methyl or Sulphur.

AUTOMATIC PRODUCTS COMPANY

2450 North Thirty-Second Street • Milwaukee 10, Wisconsin

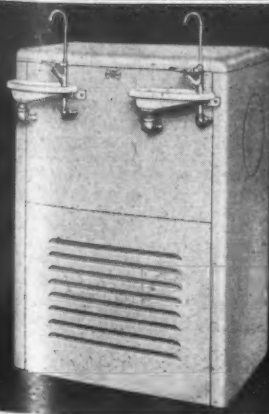
Export Dept. — 13 East 40th Street, New York 16, N. Y.



DEPENDABLE
REFRIGERANT VALVES

Stocked and Sold by Progressive Refrigeration Jobbers Everywhere —
Recommended and Installed by Leading Refrigeration Service Engineers.

NOW! COOLERS FOR WAR PLANTS



Now they can be sold! Day and Night glass filler coolers for industrial cafeterias; bubbler coolers for war plants.

DAY & NIGHT COOLER DIVISION
DAY & NIGHT MFG. CO.
MONROVIA - CALIFORNIA
FACTORY REPRESENTATIVES
NEW YORK CHICAGO
A.C. Homeyer, 682 Bdwy. • Marc Shantz, 565 Wash. Blvd.
ST. LOUIS DECATUR, GA.
R.H. Spangler, 3331 Market St. • J.E. Parker, 228 2nd St.

Motor Controls Also Need Proper Servicing

Periodic Inspection & Correction of Minor Faults Help Prevent Electrical Failures

Editor's Note: When an air conditioning or commercial refrigeration system stops running, the service man usually examines the electrical end of the unit first. Motor controls are a vital part of the electrical system and should receive proper care periodically to prevent breakdowns. This article, the first of two, explains what to look for during inspections and how to correct the faults that may be found.

By E. E. Lacy, Machinery Electrification Section, and L. E. Markle, Motor Control Engineer, Westinghouse Electric & Mfg. Co.

In the manufacture of our present-day war equipment, there are certain operations which require protection from the tiniest particle of dusts and moisture. To do this, we must provide proper air conditioning, not only for the protection of equipment; but also, for the health and comfort of our production army.

Shut-downs and failures of air conditioning and heating equipment are not only costly in monetary ways, but also delay the day of Victory. As a large share of this equipment is powered by electrical equipment, the motor is usually the first thing inspected on an electrical check-up. However, the motor control must not be by-passed, as the failure of the motor starter means

a shut-down of the complete equipment. Therefore, we must not compromise on maintenance programs that are not complete and thorough.

Satisfactory maintenance of electrical equipment requires competent men and a thorough and adequate plan of handling the inspection and repair work. Good inspection and prompt repairs will avoid high maintenance costs; complete replacements will often be avoided; lost time will be kept at a minimum.

Preventive maintenance begins with the proper selection of the motor starter. If it is not suitable for the air conditioning and heating equipment involved or if it has insufficient capacity, maintenance troubles are inevitable.

Motor Contactor Assy.

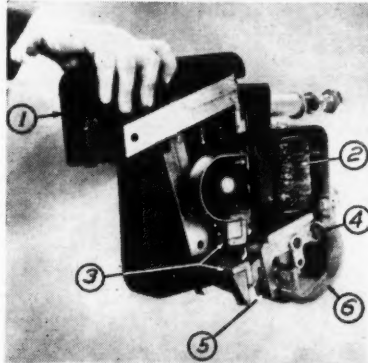


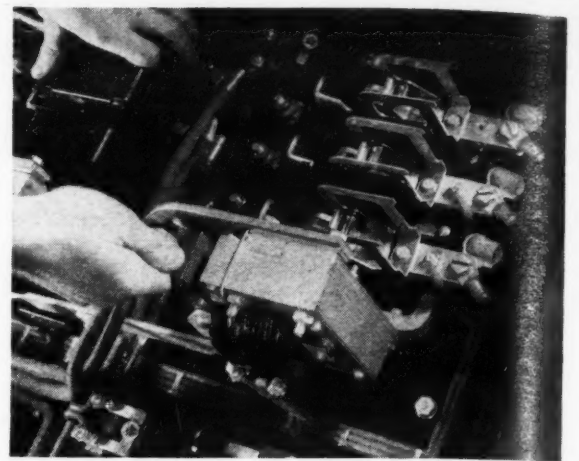
Fig. 1—Close-up view of a d.c. contactor such as used in air conditioning motor starters. 1 is the arc box; 2 coil; 3 contacts; 4 bearings; 5 contact spring; 6 shunt.

The initial inspection of a new installation should be thorough and operation observed at load conditions before final acceptance is made. A time schedule for routine inspection should be established to meet the service requirements. As motors and their starters are always associated, a combined schedule can require inspection of both.

DO NOT LUBRICATE BEARINGS

Oil and grease should never be applied to the bearings of a contactor or relay. Experience has indicated that oil or grease will cause dirt to accumulate and eventually result in a sticky, gummy accumulation that causes sluggish action. The bearings are designed with these requirements in mind and no lubrication is required on any part.

Fig. 2—Moving parts of contactors and relays must move freely and without evidence of undue friction. Bearings are made for severe duty and should not be oiled or greased.



Bearing parts should permit contactors or relays to operate freely and without apparent friction. If parts are out of alignment and excessive friction does exist, it should be eliminated. Sluggish action will cause electrical troubles. Monthly inspections for severe service and semi-annual inspections for average service will do much to prevent bearing and friction troubles.

No bearings are required when the moving parts of a contactor or relay are relatively light and the magnetic forces can be made strong enough to lift the movable parts vertically to close the contacts. This

is an ideal design as far as bearings are concerned. However, the moving parts must be guided within the solenoid and non-magnetic guides must be used to prevent magnetic sticking and sluggish action.

REPLACE BADLY PITTED OR THIN CONTACTS

Although contacts are generally thought to be subjected primarily to electrical duty, the mechanical duty is equally important. Endurance tests are made with no current through the contacts to observe how

(Continued on Page 17)

Table 1—Trouble Chart For Motor Control

| TROUBLE | CAUSE | WHAT TO DO |
|--|---|---|
| Contactor or relay does not close. | No supply voltage. Low voltage. Open circuited coil. Push button contacts not making. Interlock or relay contact not making. Loose connection or broken wire. Overload relay contact open. | Check fuses and disconnect switch. Check power supply. Wire size may be too small. Replace. Clean and replace if badly worn. Adjust and replace if badly worn. Check circuit with "flash light" (turn off power first!). Reset. |
| Contactor or relay does not open. | Push button not connected correctly. Shim in magnetic circuit * worn allowing residual magnetism to hold armature closed. Interlock or relay contact not opening circuit. "Sneak" circuit. | Check connections with wiring diagram. Replace. Adjust contact travel. Check control wiring for insulation failure. |
| Contacts weld shut. | Contacts well shut. Insufficient contact spring pressure causing contacts to burn and draw arc on closing. Rough contact surface causing current to be carried by too small an area. | See "Contacts Weld Shut." Adjust, increasing pressure. Replace if necessary. Smooth surface and replace if badly worn. |
| Arc lingers across contacts. | If blow out is serious, it may be shorted. If blow out is shunt, it may be open circuited. If used, arc box might be left off or not in correct place. If no blow out used, note travel of contacts. | Look at wiring diagram and see kind of blow out. Check to see if circuit through blow out is all right. See that arc box is on contactor as it should be. Increasing travel of contacts will increase rupturing capacity. |
| Noisy AC magnet. | Improper seating of armature. Broken shading coil. | Adjust. Replace. |
| Excessive corrosion of contacts. | Chattering of contacts as a result of vibrations outside of the control cabinet. High contact resistance because of insufficient contact spring pressure. | Check control pressure and replace spring if it does not give rated pressure. If this does not help, move control, so that vibrations are decreased. Replace contact spring. |
| Abnormally short coil life. | High voltage. Gap in magnetic circuit †. | Check supply voltage and rating of controller. Check travel of Armature. Adjust so that magnetic circuit is completed. |
| Panel and apparatus burned by heat from starting resistor. | Too high on ambient temperature. Motor being started too frequently. | Check rating of contact. Get coil of higher ambient rating from manufacturer if necessary. Use resistor of higher rating. |

*DC only. † AC only.

Electromatic
AUTOMATIC CONTROL
VALVES AND REGULATORS

2100 INDIANA AVENUE · CHICAGO 16, ILL.

Artic (DU PONT METHYL CHLORIDE) SERVICE NEWS

WAR-TIME NEWS LETTER

Dear Sir:

When necessary to convert "Freon" units to Methyl Chloride, take every precaution to do it safely. Follow closely the ASA Refrigeration Code to avoid dangerous practices.

Concentrations of 8 to 17% of Methyl Chloride vapors mixed with air ... are flammable. Vapor concentrations of 2-1/2% or more Methyl Chloride ... are toxic.

Average household unit, however, contains less than 3 lbs. of refrigerant ... so there is little practical hazard from leaks ... unless discharge is confined entirely in a small room which has no ventilation ... or no change of air during leakage.

Don't use Methyl Chloride with aluminum, zinc, magnesium and its alloys, die castings ... as these materials may be attacked when only small amounts of water are present.

Prevent trouble from moisture ... by doing everything you can to keep moisture out of the system ... by removing any water which may be present ... by using a dry Methyl Chloride.

Du Pont Methyl Chloride ("Artic"), as shipped, has less than 0.008% moisture ... not enough to be harmful ... but it can pick up water during transfer to smaller cylinders or in charging. Use only dry lubricating oils ... keep them in tight containers out of contact with air.

More about "moisture effects" ... and other helpful information in our 92-page book "Du Pont Methyl Chloride." We'll be glad to send you a copy.

Very truly yours,

Thomas Coyle

THOMAS COYLE
Manager, Chlorine Products Division

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Contacts of Air Conditioning Motor Controls Require Special Care

(Continued from Page 16, Column 5)
well they withstand the pounding, rolling and sliding or scrubbing action that occurs every time the contacts close.

Contact designs often provide a rolling action of the contacts so that the circuit is closed and opened on the contact tips instead of on the closed contact position.

When high currents that are difficult to interrupt are expected, powerful arc rupturing structures are supplied to force the arc off the contacts and quickly extinguish it. These arc-rupturing structures are called arc boxes or blow-out structures. When in operating position they completely surround the contacts and must always be in correct position to rupture the arcs effectively. They are easily removed for inspection or replacement of contacts. They must be returned to proper position after inspection so that the arc will be properly broken and the contacts will not be unnecessarily worn and burned.

Contacts should be renewed when badly burned or pitted and when worn thin. They should be clean but need not be smooth. In fact, a clean

contact with a roughened surface comparable to coarse sandpaper is a very satisfactory condition and provides as good, or better, contact surface than perfectly smooth surfaces. If a contact surface is pitted or burned and not worn thin it can be cleaned and used again.

The method of cleaning is important. Coarse and crude filing wastes material and generally deforms the original contact shape. The contact surfaces then have high spots and point contacts that are apt to overheat.

BEST METHOD OF CLEANING

Instead of filing, clean with sandpaper or by buffing wheel. A fine file is permissible if the contact shape is maintained. Emery paper should never be used as particles may adhere to the surface and cause unnecessary wear.

Silver contacts seldom require cleaning. They may look black and dirty because of the silver oxide but as the oxide is a conductor, cleaning is not often necessary.

When contacts are replaced, the surface against which they are bolted should be thoroughly cleaned. This is usually a current carrying joint and a clean contact bolted to a dirty surface can not give best results. Both surfaces should be clean. Any traces of copper oxide should be removed.

The screws or bolts that hold contacts in place must be tight at all times. A loose contact surface offers high resistance and develops heat. This causes increased oxidation of the copper contacts. As copper oxide is not a good electrical conductor, this oxidation creates still more resistance and heat. This action is cumulative and eventually causes contacts to melt and deterioration of the entire contact assembly.

FREQUENT OPERATION HELPS

When contacts open and close, the rolling and rubbing action combined with the slight burning of a normal arc combine to keep the contacts bright and clean. If the contacts operate infrequently, the cleaning action does not occur and a covering of copper oxide develops. The heating-oxidation cycle may start and eventually overheating may develop even though the current or load is normal or less.

For such conditions, silver con-

tacts will probably give better service as silver oxide is a good conductor and heating does not develop. Silver contacts may also provide some relief in cases where a small overload condition is troublesome. They must, however, be used with some caution because they will not correct overheating caused by loose connections. As silver has a lower melting temperature than copper, silver contacts are more prone to become soft and "weld" or "freeze" together when subjected to high arcing temperatures.

Other special alloy materials are available that give reasonably good service under certain unusual or specific conditions. Contacts made of special materials should be used only on advice of the manufacturer of the device. Usually they are rated at lower current carrying capacities than similar contacts of copper or silver.

(To Be Continued)

Ward Schafer To Head Hotpoint Western Sales

CHICAGO—Ward R. Schafer has been appointed regional sales manager of the western region for Edison General Electric Appliance Co., Inc. Headquarters are in San Francisco for the region, which comprises the districts of Salt Lake City, Los Angeles, and Seattle.

Mr. Schafer joined Hotpoint in 1924 as an engineer in the commercial cooking sales division. Later he was manager of the product service division for six years; and when the war interrupted manufacturing and sales, he was range sales manager.

Contacts Must Be Tight



Fig. 3—Contacts worn through by long use or badly burned contacts must be renewed, and the service man should be sure that contacts are tight at all times. Blackened silver contacts or roughened copper contacts may be entirely satisfactory, however.



CHICAGO SEAL Presents NEW LINE OF VALVE PLATES

These new Chicago Valve Plates cut cost and save work. The only valve plates with removable valve seats, they make it possible to replace only worn parts, not entire units. To take them apart, merely remove screws and pull seat out with the fingers. Valve seats are firmly held in position by a retainer bar, strongly secured to the plate. Complete range of sizes to accommodate most makes of refrigerators.

Ask your jobber to show you the new Chicago Valve Plates ... also These Two Famed CHICAGO SEALS



CHICAGO SEAL CO. 20 NORTH WACKER DRIVE CHICAGO 6, ILLINOIS



A "Natural" Teammate with Bundyweld THE SOLID DOUBLE WALL STEEL TUBE

In hydraulic brake lines and in all lines where there may be over-torquing or where higher pressures are carried, Bundy recommends Bundyweld Tubing and the Bundy double flare—a combination which assures leakproof, pressure proof joints.

Bundyweld is a SOLID double walled tube laterally rolled from a single strip of copper-coated S.A.E. 1010 steel. Bonded with copper throughout the 360° of wall contact ... brazed in a furnace where the atmosphere is carefully controlled to prevent

oxides and to provide a clean, bright finish inside and outside ... this unique tubing is made by an exclusive Bundy process. It is furnished hard or annealed in a wide range of standard diameters and gauges up to 3/8" O.D. Special sizes, cold drawn as desired.

For further information on Bundyweld, write Bundy Tubing Company, Detroit 13, Michigan ... our engineers are ready to help you solve your tubing problems in war and peacetime products.

BUNDY TUBING

ENGINEERED TO YOUR EXPECTATIONS

Pacific Metals Company, Ltd.
3100 19th Street
San Francisco 10, California

Standard Tube Sales Corp.
1 Admiral Avenue
Maspeth, New York City, N. Y.

Lapham-Hickey Company
3333 W. 47th Place
Chicago 32, Illinois

Rutan & Company
112 South 16th Street
Philadelphia 2, Pennsylvania

Eagle Metals Company
3628 East Marginal Way
Seattle 4, Washington



BLUEPRINT for TOMORROW

Helicopters, television, glass homes, streamlined transportation, tabloid foods—the dreamers promise us a "push-button paradise." Yes—many of us were born "30 years too soon." In the meantime, we turn out ordnance instead of compressors—doing our part for the final Victory that will crystallize our brave blueprint for tomorrow.



MERCHANT & EVANS COMPANY
PHILADELPHIA, PENNA. • Plant: LANCASTER, PENNA.

BETTER THAN THE NOSE OF HAL THE HOUND is the LENK HALIDE LEAK DETECTOR



The Lenk Halide Leak Detector is also an effective Hi-Heat Alcohol Blotter.

CONSERVE IRREPLACEABLE REFRIGERANT GASES



SELF-CONTAINED UNIT, EASY TO CARRY AND EASY TO USE

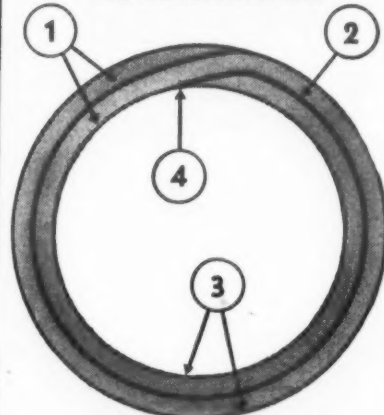
Lenk Halide Leak Detector features flame control, shut-off valve, self-cleaning orifice, non-clogging burner.

Bundy Double Flare

Provides Leakproof, Pressure Proof Joints



Look at Bundyweld Construction!



1. DOUBLE WALL
2. COPPER BRAZED
3. COPPER COATED inside and outside
4. NO INSIDE BEAD

Hirsch Discusses Design Factors That Had Bearing on Comparative 'Freon' Tests

By S. R. Hirsch, Chief Engineer, Brunner Mfg. Co.

I hope that I will be permitted some additional words of explanation, in regards to my remarks on some comparative tests on "Freon-12" and "Freon-22" which you published in your issue of April 24, with some comment on the same by R. J. Thompson in your issue of May 8.

Otherwise, the data previously reported is certainly under a cloud.

I would like to have it understood that I think Mr. Thompson and his company have done more for our industry than any single group. No one has greater admiration for nor appreciation of this than we of the small condensing unit group, who were literally blown into this refrigeration business with the rush of gases invented and popularized by the refrigerant suppliers.

However, I am sure that Mr. Thompson would agree that our compressor group has done considerable experimenting and known their way around with these gases and the many deviations of them. We don't wish to boast unseemingly but it would certainly be strange if the engineers in this group did not understand the compression subject from all angles. We think we can speak authoritatively of these small commercial designs both from an engineering and production standpoint.

I agree with Mr. Thompson that, perhaps, much of his advertising copy

and published articles have not been carefully read. I have read most of them but I must confess that I still feel uncertain as to just what role is expected of "Freon-22," even after his remarks. It is stated that "Freon-22" has a very definite place in that range of temperature which is definitely downward, but if he will just say how far down, we perhaps have no controversy.

Our tests are confined to evaporator ranges from 0 to -40° F. This means a box temperature probably no more than -20° F. Below that it is probably desirable to use "Freon-22." It was so stated in the original article.

What Are Considerations On Temperature Range

Ice cream cabinets operate at an average evaporator temperature of about -10° F. and a cabinet temperature of from 0 to -10° F. I know several farm freezer experimenters who have boasted to me about being able to hold their freezers at 0° F. with -10 to -20° evaporator temperature. None as far as I know have considered going as low as -40° F. evaporator temperature for such applications.

It is possible that some special freezer applications would require reduced freezing time, which could be

done by maintaining extremely low (below -40° F.) evaporator temperatures. It would certainly be advantageous to shift to "Freon-22" in that case.

To my mind, I think it somewhat misleading to state "Freon-22" is called a "natural" by enthusiastic engineers for low temperature refrigeration such as locker plants, farm freezers, and cold storage houses and eventually ice manufacture. In order to be a "natural," it must fulfill certain definite requirements. The criteria for refrigerants for various purposes has already been very competently discussed by Mr. Thompson and other engineers in his company. It would seem to me that when these are applied to "Freon-22," there is a conflict between these claimed advantages and the known advantages of the refrigerants now available.

Mr. Thompson objects to the fact that the compressor used in our tests was a "Freon-12" compressor and not a "Freon-22" machine, specifically designed for the purpose. Before making a test comparison, there was naturally a complete study made to make sure such an objection would not invalidate the results. The outcome of this analysis leads to our conclusion that the test was a just comparison and that the converted equipment, in fact, favored "Freon-22." I would like to amplify

this, so as to justify our statement that the "Freon-12" compressor used for test gives an advantage to "Freon-22."

Gas Characteristics That Are of Importance

When a compressor is designed, a study is made of those gas characteristics which are of primary concern. These are classified, as, first, gas density, which dictates valve and port sizes. Second, ratio of specific heat, which gauges its sensitiveness to cylinder clearance and the temperature rise during compression. Third, pressure differential (the difference in maximum operating pressure between discharge and suction) which affects bearing design and cylinder leakage. Fourth, the affinity for oil which permits a choice of the kind of lubricating system to use.

We will now make our comparisons for "Freon-12" and "Freon-22." First, consider density. "Freon-12" has a molecular weight of 120.9, while the value for "Freon-22" is 86.48. In other words, throughout the operating ranges we can expect that "Freon-12" will be 40% denser than "Freon-22." Since it is denser, "Freon-12" requires greater valve and port areas than "Freon-22." But the compressor is already proportioned with valves and ports to take "Freon-12" so it is more than ample for "Freon-22."

In addition, the "Freon-12" unit operated at 900 while the "Freon-22" unit averaged 625 r.p.m. Actually, therefore, the "Freon-22" compressor was given the benefit of an additional 30% lower valve and port velocity than was the "Freon-12" unit. All compressor designers and experimenters realize the advantage of lower valve and port velocities. We are certainly correct, therefore, in saying that, on the first point, the design is favorable for "Freon-22."

Ratio of Specific Heats

Next, consider the ratio of specific heats. "Freon-12" has a ratio that for practical purposes can be called 1.15. That, for "Freon-22," according to Kinetic Chemicals Co. data is about 1.2 at the operating limits of our data. For a particular clearance it is more imperative, therefore, to have a close clearance compressor for "Freon-12," which has a low value of specific heat ratio, than it is for "Freon-22."

The ratio of specific heat indicates that "Freon-22" will get hotter than "Freon-12," but with such a small compressor it is impossible to increase fins to improve cooling and

it is doubtful whether they would give any in the test. The higher temperature was not appreciably excessive in the test. This characteristic is not favorable to a "Freon-22" compressor but we will not take credit for it as it seems a very slight disadvantage. In general, therefore, we might say that, on the basis of any analysis of specific heats, our second point, the design is favorable to "Freon-22."

Pressure Differential

Next, let's discuss pressure differential, point No. 3. The way to reduce friction and inertia losses in a compressor is to make all parts as small and light as possible. When this has been carried as far as design limits will permit, the next step is to increase the loading of the parts. The result is a low friction unit, but one which seldom gives long life in service because of heavily stressed parts.

By using "Freon-22" in a "Freon-12" compressor, we are handling the gas with lighter parts than it would ordinarily use. The unit frictional forces are less and overall performance is improved. In order to have secured the same benefits for "Freon-12," we would have had to lighten parts and increase loading to the same degree. In spite of giving "Freon-22" the benefit of light construction, it showed no advantage.

Continuing our discussion of point No. 3, regarding piston running fits as affecting leakage, our designs are assembled with selective fits between piston and cylinder. They are as close as it is advisable to go without encouraging seizing. Since "Freon-22" is less dense while the pressure differential is increased, we are warned that greater gas leakage can be expected but I am afraid the designer is powerless to prevent this. If an elaborate construction is needed, that is certainly not favorable to "Freon-22." Viewing point No. 3, in toto, therefore, from all practical considerations we do not have a design which is unfavorable to "Freon-22."

The affinity of "Freon-22" for oil is not sufficiently different from that of "Freon-12" to require a change in lubrication. The compressor used splash lubrication. The fourth point does not seem controversial.

It is stated that the design is too light if it cannot withstand operating on "Freon-12" and "Freon-22." Anyone familiar with Underwriters Laboratory requirements is aware that the manufacturer who abides by its

(Concluded on Page 19, Column 1)

Instead of building a concrete base... necessary to support ordinary heavy duty compressors... the Chrysler Airtemp Radial Compressor can be placed on any regular floor without bolting down. It rests on a few isolation pads, operates smoothly and quietly.

CHRYSLER AIRTEMP VARIABLE CAPACITY RADIAL COMPRESSOR

Easily and quickly installed

Wherever you find the famous Chrysler Airtemp Radial Compressor... you'll find the ease of installation was a pleasant surprise to the owners.

Beautifully balanced, light in weight and practically free from vibration... you can balance a penny on it at 1750 R.P.M. . . . the Chrysler Airtemp Radial Compressor, regardless of size, needs no special foundations.

This feature saves unnecessary construction costs—permits location of compressor on an upper floor, the roof or wherever it is most advantageous. Eight years ago,

a big radio station even placed a 14 cylinder Chrysler Airtemp Compressor unit right over the sound-proof studios. It's still there... doing a superb job.

These days... with scarce manpower and a need for time-saving, efficient operations... industries and services geared to the war program are turning to Chrysler Airtemp air conditioning and refrigeration units.

If you have a temperature-humidity control problem—put it up to Chrysler Airtemp. You'll find it pays!

BUY WAR BONDS

CHRYSLER AIRTEMP
AIRTEMP DIVISION OF CHRYSLER CORPORATION • DAYTON, OHIO

Tune in Major Bowes every Thursday, CBS, 9 p. m., E. W. T.

HERE IS USEFUL DATA FOR YOU...IN ORDERING CONTROL REPAIR PARTS

Exactly the information you need is easily and quickly accessible in the 1944 edition of Penn's condensed catalog. Standard replacement parts as well as controls in the complete Penn line are listed, described and priced. If you have not received your copy, a postcard request will bring one to you quickly.

PENN ELECTRIC SWITCH CO., Goshen, Indiana
Export Division, 13 E. 40th St., New York 16, U. S. A. In Canada, Powerlite Devices, Ltd., Toronto, Ontario

'Higher Back Pressures Do Not Always Mean Better Volumetric Efficiencies'

(Concluded from Page 18, Column 5) requirements is forced to design his units for very definite pressures. The placing of a U. L. sticker on a condensing unit assembly guarantees a customer that the compressor unit is designed safely and certainly of that, at least, he should be assured. The U. L. sticker denotes that the manufacturer has satisfactorily passed the following tests:

"All parts of the highside of air cooled refrigerating systems which are subject to pressure shall be designed and constructed with a factor of safety of at least 5, based on the maximum pressure obtained during the operation at 40° C. (104° F.)."

"All parts of the high pressure side of water cooled refrigeration systems which are subject to pressure shall be designed and constructed with a factor of safety of at least 5, based on the maximum setting of the pressure limiting device."

"All parts of the low pressure side of the refrigerating system which are subject to pressure shall be designed and constructed with a factor of safety of at least 5, based on the evaporator pressure of the refrigerant used at 70° F."

With the above points in mind, now look at Table 1.

It is seen from Table 1 that the compressor manufacturer is asked by Mr. Thompson to supply a crankcase of almost double the test pressure while heads, condensers, and receivers are heavily affected although not to quite the same degree. I think all will agree that this outline indicates something much more than just a case of borderline design.

Of course, that is not going to stop any manufacturer from designing his units with lower safety factors, but if he does so, he will not be in a position to apply the U. L. label and prospective user should be so advised.

Getting back to the "Freon-12" system we believe we have completed our analysis of the compressor and

can go to the condenser used on this assembly. If condenser surface has to be increased, there is certainly no advantage. However, it is to be noted that at a "Freon-12" condensing pressure of 170 lbs., the corresponding temperature is about 126° F., while "Freon-22" condensing at 240 lbs. has a corresponding temperature, according to Kinetic, of about 110° F. So from our published tests, "Freon-22" is given the benefit of lower condensing temperature, perhaps, due to better heat transfer coefficients than "Freon-12," and, therefore, the surface available is more favorable for "Freon-22" than it is "Freon-12."

The type of evaporator or expansion valve has no bearing on this test. We were using a calorimeter and our test reflects only the comparative performance of a condensing unit.

In view of these facts, the conclusions seemed inescapable. If "Freon-22" was to show any advantage, the comparative tests we made would certainly disclose it, as the design gave it every break.

'Incorrect Thinking'

In the discussion of volumetric efficiency I am afraid there is being repeated some of the incorrect reasoning that has dogged the thinking of our industry for many years. In the old days, when sulphur dioxide was the popular refrigerant, low temperatures required extremely low vacuums. It was found that methyl chloride and later "Freon-12" permitted lower temperatures, smaller displacement compressors and operated at higher back pressure.

Immediately, the popular conception arose that higher back pressures meant better volumetric efficiencies. It is not true. This much is true. When a deep vacuum is required, the suction valve has to be very light, tight sealing, etc. There is a limit to the vacuum that can be drawn with a reciprocating compres-

sor and it can generally be stated that if the suction pressure is so slight that it begins to approach the force required to open and close the valve, then the cylinder filling is affected and, consequently, the volumetric efficiency. The point at which this effect becomes noticeable is a function of the suction valve design. In the design tested, it has not begun to affect the volumetric efficiency at evaporator temperatures down to -40° F.

Above this point in the design, volumetric efficiency checked with many different refrigerants and gases is a function of the ratio of compression, the cylinder clearance, and the ratio of specific heats. Suction pressure is not a factor. Published data in the ASRE Data Book confirms this.

Naturally, a "Freon-12" and a "Freon-22" system compared not with themselves will show improved performance when the system can be operated at higher back pressures. There is no argument there. But just because one gas gives a higher pressure operating range than the other is no reason to reach a conclusion that this same is true. Based on that reason, we should be able to improve the capacities by leaps and bounds, simply by discovering higher pressure refrigerants.

Where Fallacy Lies

This reasoning is contrary to every physical law. We attain small displacement compressors not because of an improvement in volumetric efficiency but because each cubic foot of gas handled has a greater potential heat content. Thus we do not have to compress as many c.f.m. of

gas to get the same refrigerating effect in some comparisons. This improvement, however, must be considerable in order to make the substitution of value.

For instance, we consider the substitution of methyl chloride of "Freon-12" in place of sulphur dioxide a real contribution because there were physical limits to the design of the sulphur dioxide compressor and those physical limits occurred just at the point where we wanted to get our practical designs. If the same reasoning holds for "Freon-12" and "Freon-22" within our test limits, then considerable additional facts are needed to support it.

How 'Back Pressures' Count

To repeat, higher back pressure on a "Freon-12" system improves volumetric efficiency. Higher back pressure of a "Freon-22" system also improves volumetric efficiency. The higher back pressure of the "Freon-22" system at the same evaporator temperature as the "Freon-12" system does not imply an improvement in volumetric efficiency unless the force required to open the suction valve is an appreciable percentage of the available suction pressure. This is not present with the designs nor in the ranges of the reported tests.

I am sure these remarks are by no means a final word. I am hopeful that others will have their say. In the meantime, however, I cannot agree that the criticisms made so far invalidate our results. We reaffirm the genuineness of the tests, which were disclosed, as being a true

and honest report on the comparative performance of the refrigerants in question.

It would appear that these tests restrict the existing market for "Freon-22" to the extremely low temperature ranges. I cannot see that this is limiting the volume of sales. Present technological advances and those yet to come will unquestionably develop new uses for this refrigerant within its advantageous range. I predict an expanding market and every manufacturer will certainly be prepared to take advantage of its particular characteristics. We believe our tests merely "place" "Freon-22" among its brother refrigerants.



Distinctive worm gear tightening action provides powerful belt-like pull-up. Uniform pressure all around prevents leaks. Can be put on or taken off hose in place on pipe. Can be re-used. No loose parts. Compact design. Extremely long take-up. Made in sizes from 1/2" up. Write for circular.

Aircraft Standard Parts Co.
1701F NINETEENTH AVE., ROCKFORD, ILL.

Table 1—Design Pressures for 'F-12' & 'F-22'

| AIR COOLED CONDENSING UNITS—Designed Working Pressures | | | | |
|--|--|--|------------------|---|
| Gas | Probable Cond. Press. At 104° F. Ambient | Design Press. For Heads, Receivers, Condensers | Press. At 70° F. | Design Press. For C' Case and Lowside Equipment |
| "Freon-12" | 180 lbs. | 900 lbs. | 70.1 lbs. | 350 lbs. |
| "Freon-22" | 250 lbs. | 1,250 lbs. | 137.2 lbs. | 685 lbs. |

| WATER COOLED CONDENSING UNITS—Designed Working Pressures | | | |
|--|-----------------------------------|--|---|
| Gas | Setting of Press. Limiting Device | Design Press. For Heads, Receivers, Condensers | Design Press. For C' Case and Lowside Equipment |
| "Freon-12" | 175 lbs. | 775 lbs. | 350 lbs. |
| "Freon-22" | 250 lbs. | 1,250 lbs. | 685 lbs. |

Good for the Last Drop



.... of MOISTURE!

Thawzone is not only excellent for most cases of moisture in refrigeration systems, but, paraphrasing a famous slogan, it is good for that last drop of moisture which becomes sidetracked or "trapped."

Thawzone is a MOVING dehydrant. It circulates, searches out that "last drop," destroying it chemically wherever it finds it. Sold by refrigeration supply jobbers in the United States and Canada.

A MINY AMOUNT → A BIG JOB ← SMALL COST

THAWZONE

the PIONEER FLUID DEHYDRANT

HIGHSIDE CHEMICALS CO.

195 Verona Ave. NEWARK 4, N. J.

For the Duration

CURTIS REFRIGERATING EQUIPMENT

Serves Our Armed Forces

- First!

● CURTIS Air Conditioning and Refrigeration Equipment has followed the Armed Forces of the United States on both land and sea, in addition to serving war industries at home. Some of the innumerable applications include hospital operating rooms, blood banks, food preservation, simulating high-altitude, low-temperature conditions for the Air Forces in photographic work; in the production of aircraft engines, propellers, rivets, bomb sights, gauges, medicines, parachutes, synthetic rubber, and many other uses vital to America's War Effort.

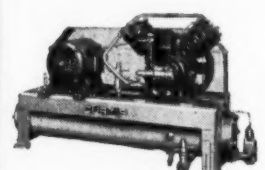
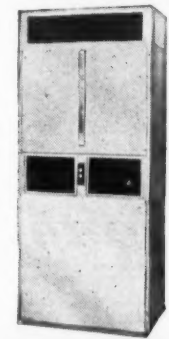
We are proud that CURTIS Equipment is serving the war effort in such a wide variety of important applications, just as it has for many years served peace-time industries. We are proud of the background which has made this possible—90 years of successful manufacturing experience, advanced engineering, precision manufacture, and the use of the finest materials throughout.

All Curtis equipment is designed and built to deliver dependable, trouble-free, economical performance.

CURTIS REFRIGERATING MACHINE DIVISION

of Curtis Manufacturing Company

1930 Kienlen Ave. St. Louis, Missouri



Official U. S. Navy and U. S. Army Signal Corps photographs.



FOR VICTORY

BUY UNITED STATES WAR BONDS AND STAMPS

Increased Efficiency Urged to Overcome Repairman Shortage

Washington Institute Develops Program To Show Servicemen How 'to Get More Done'

WASHINGTON, D. C.—Continuing its many-sided attack on the critical problem of manpower shortage in the refrigeration service field, the Electric Institute of Washington has decided that the best possible answer to immediate needs is to inspire the individual mechanics to greater effectiveness in the use of their time and experience.

With this in mind the institute entertained 250 representatives of the refrigerator repair industry in Washington at a meeting May 24 during which was announced a program that may add at least 10% to the experienced manpower available, reports J. S. Bartlett, managing director of the institute.

Of major importance in the institute's new approach to this problem is the preparation of a "Refrigeration Dispatcher's Routine Question Card," a 9 in. x 14 in. card to be hung at the telephone locations of service agencies, which lists specific questions for the dispatcher to ask to obtain accurate information on the customer's complaint in the least possible time.

Purpose of the card is to "1—speed up the handling of customer calls for service, 2—prevent unnecessary service calls, and 3—provide in-

formation on which the trouble can be analyzed."

An inexperienced employe answering the phone should benefit by the use of card because "it advises him of the types of complaints he may expect, and the questions to ask concerning any specific complaint," says the institute. "It gives him also a better opportunity to control the conversation, and speed up the handling of the service call."

The experienced dispatcher also should profit from the card since it will permit him to "write his service order in logical sequence (within any one specific complaint), and tends to give him, rather than the complainant, control of the conversation."

It is believed that these questions, if properly handled, will eliminate a number of unnecessary service calls where cold controls have not been reset, where refrigerator cords have dropped out of their outlets, or where a main fuse has blown.

Another weapon used in the institute's attack—a psychological tendency of a "Certificate of Contribution to Victory."

The certificate was made out for each individual mechanic and was signed by the president and man-

aging director of the institute. Accompanying each certificate was a reproduction of a letter from Dr. George C. Ruhland, health officer of the District of Columbia, recognizing the importance of refrigeration and the serious problem presented by war-time conditions in the repair industry, as well as commending the individual mechanic for the very real contribution that he is making in support of the war effort.

Another part of the institute's program to impress upon the individual mechanic the serious need for his sincerest efforts was the production of a poster, 28 in. x 42 in., in three colors, which will be furnished to refrigerator repair agencies for display in their shops and will serve as a continual reminder of the responsibility of the mechanics. The wording on the poster, "They have a job to do (the armed forces)—you have a job to do," reflects the fact that skilled mechanics on the home front play an important part in assuring full equipment and participation by the armed forces.

The principal speaker at the meeting was George F. Taubeneck, editor and publisher of AIR CONDITIONING & REFRIGERATION NEWS. Mr. Taubeneck dramatized the value of refrigeration to the armed forces not only in preservation of their food, but as being essential in the production and operation of much of the combat material, and in medical aid to the injured.

Activities of the institute during the past year, in an effort to maintain essential refrigeration repair service, were also outlined. One of the major factors in retaining essential refrigerator mechanics was the institute's filing of a "Group Replace-

Repairmen Are In the Spotlight



The Electric Institute of Washington rallied the refrigeration repairmen to meet the coming peak season in repair work at a special meeting May 24, at which some unique helps designed for the repairmen were outlined, and at which prominent speakers from the industry and government were on hand to give their views.

In the front row here are George Kindley, vice president, Edgar Morris Sales Co. (former president of the Institute); Webster Powell, Director, Manpower Division, Office of Civilian Requirements, and the man who has worked closely with the National Refrigeration Service Council on the training and retention of repairmen; George F. Taubeneck, editor of Air Conditioning & Refrigeration News; Lt. Col. K. D. Puleipher of National Selective Service headquarters; and J. S. Bartlett, managing director of the Institute.

ment Schedule" with State Selective Service Offices in the District of Columbia and Maryland. In these schedules the mechanics of more than 40 repair agencies were grouped, and an orderly withdrawal of men was provided. Assistance to repair agencies in the presentation of individual cases of mechanics before their local draft boards also played an effective part in assisting the repair agencies.

A series of training schools for refrigeration mechanics recruited and placed in the industry approximately 40 apprentice mechanics. These men were secured from other industries, trained during a 12 weeks' eve-

ning course, and placed with individual repair agencies.

In addition to taking these steps within the industry, the assistance of the public has also been solicited. A folder which will be enclosed in the June bills of the Potomac Electric Power Co. is aimed at two purposes: it suggests steps which should be taken by the refrigerator owner to prevent a breakdown and provides him with a sticker to paste inside his refrigerator door on which is given the information which should be provided to the repair agency when a trouble call is reported.



A REPUTATION FOR SUSTAINED

DELIVERY

Although war time production and restrictions have necessarily made it very difficult to produce and ship goods to our customers at a rate approximating our peace time rate, we have managed to supply our customers with their essential requirements in reasonable time.

This condition does not prevail through mere chance. When the war broke out we made an extensive study of how we could best serve our customers within existing regulations. This, together with the fact that we are not dependent upon outside sources, but manufacture and control all the parts and operations of our products from the virgin metal to the finished goods, is largely responsible for our favorable position today. **WE HAVE A REPUTATION FOR SUSTAINED DELIVERY.**

Mueller Brass Co. refrigeration products are in use with our armed forces on practically every front. They are incorporated in units produced by other manufacturers who depend upon us for prompt service and quality products.

Service engineers can place full confidence in Mueller Brass Co. Valves and Fittings. Rigid laboratory control, skilled engineering, highest quality materials, precision workmanship and rigid inspection combine to make our products constantly dependable.

**MUELLER
BRASS CO.
PORT HURON, MICH.**

VALVES • FITTINGS • ACCESSORIES FOR
REFRIGERATION AND AIR CONDITIONING

REFRIGERATION DISPATCHER'S ROUTINE QUESTION CARD

1. What Is the Make of Your Refrigerator?

How old is it?
Your name please,
Address
Phone?

2. What Seems to Be Wrong with the Refrigerator?

Complaint A—It Does Not Run

Questions

Does the refrigerator have a light inside?
Does the light come on when the door is opened? (if not)
Is the cord plugged into the electric outlet?
Have you tested the electric outlet—the fuse may be blown?
Is the cold control switch inside of the box in the ON position?

Complaint B—There Is No Refrigeration

(This applies when mechanism is operating but does not provide refrigeration.)

Questions

Is the cold control switch inside of the box in the ON position?
Does the mechanism run all the time?
Is there any gurgling sound in the food compartment?
Is there any frost on the freezer?
Does it make ice cubes?
Is the belt broken?
Is there any on and off click (starting and stopping)?
Is there any hum coming from the motor?

Complaint C—The Refrigerator Is Noisy

Questions

What sort of noise is it?
A Rattle? A Thumping Noise? A Knock? A Ping?

Complaint D—The Box Is Too Cold

Question

Have you checked to see that the cold control setting is at normal?

★ ★ ★ ★ ★

NOTES

In most cases of difficulty the customer should be advised to pull out the plug and wait for the service man.

While this list cannot be complete for all boxes or types of difficulty, it does cover the great majority of cases. By using this routine question list much time can be saved and many service calls avoided.

Time is short like everything else — BE BRIEF

WANTED REFRIGERATION ENGINEER

CANADIAN FACTORY OF WELL KNOWN AMERICAN CORPORATION REQUIRES EXPERIENCED REFRIGERATION ENGINEER PREFERABLY MAN WITH EXPERIENCE IN DESIGN OF ICE CREAM CABINETS, SODA FOUNTAINS, FROZEN FOOD CABINETS, AND GENERAL COMMERCIAL EQUIPMENT. MAN SELECTED MUST BE ABLE TO CREATE NEW AND IMPROVED DESIGNS IN LINE WITH MARKET AND CUSTOMER DEMANDS. TO SUCH A MAN THE OPPORTUNITY NOW AND IN THE POST WAR FUTURE IS EXCELLENT. IN REPLY, GIVE FULL DETAILS OF YOUR TRAINING, EXPERIENCE, AGE AND PRESENT EARNINGS. BOX 1565, AIR CONDITIONING & REFRIGERATION NEWS.



Army Refrigeration Problems

By P. B. Reed

Manager, Refrigeration and Air Conditioning Division, Perfex Corp.

Storage Temperature Not For Freezing

There are two standard temperatures for "Cold Storage Plants," 35° to 45° F. and 0° to 10° F. The 35 to 45° rooms comprise most of the storage space, for within this range of temperatures most of the refrigerated products are kept, such as whole carcasses of meat and cut meats, vegetables, fruits, dairy products, lard, and the many other foods that require refrigeration for their proper preservation, either in short-time storage of a few days or for somewhat longer periods up to several months.

The 0 to 10° spaces are for the storage of pre-frozen foods such as frozen meats, frozen fruits, and frozen vegetables. These rooms are not to be used for freezing foods—only for storing such foods as have been previously frozen elsewhere. There are three very good reasons why the standard 0 to 10° rooms must not be used in attempting to freeze foods.

1. The 0 to 10° temperature is not low enough for freezing most foods as quickly as is required.

2. The refrigerating capacity of the equipment is not great enough for freezing duty.

3. Lack of facilities and technique in the proper acquisition, preparation, and handling of foods for freezing.

If the above reasons for not attempting to use 0 to 10° rooms for freezing foods, do not seem sufficient there is another very potent reason, one that will be of interest to supply officers, which is an order from the Quartermaster General that expressly forbids this practice.

TEMPERATURES REQUIRED FOR FREEZING

There is a great deal of difference of opinion, even among "experts" within the refrigeration and food industries as to the proper temperatures and methods to be used in freezing various foods. These opinions vary all the way from one extreme which contends that foods must be "quick frozen" at temperatures between -45 to -50° F., to the opposite extreme which believes that (with a few exceptions such as fish and some fruits) the freezing may be done just as well at temperatures of about zero.

The truth probably lies somewhere between these two extremes; some foods do doubtless require extremely fast freezing, perhaps by the direct contact method, other foods quite possibly may be frozen at much higher temperatures and much more slowly and still be quite palatable after they have been thawed.

Freezing foods is not new, but in the earlier methods foods were frequently frozen more slowly than they should have been and as a result the moisture in the cells of the food froze slowly and in large crystals which broke the cell walls. As a result these broken walls allowed the food to become flabby and unpalatable after it was thawed in preparation for use.

The present impetus that has been given to the frozen food industry has been largely due to the "quick freeze" processes that freeze the food so fast that the moisture freezes into small crystals which do not break down the cell walls and as a result the tissues stay intact and when the foods are thawed they return to their original form with little if any change in their appearance or palatability.

It can therefore be safely assumed that in order to preserve the original structure of the food and to not im-

pair its body and flavor, the food must be frozen faster than it can be done in the 0 to 10° F. rooms.

LOAD FACTORS IN FREEZING FOODS

It must be remembered that when foods are frozen they pass through a change of state. The liquids in the foods change to the solid form and in doing so give up their "latent heat of fusion" just as water does in changing to ice. This varies considerably according to the type of food but is somewhat less than 144 B.t.u. per pound which is the latent heat of fusion of water.

To cool one pound of beef from 45° to 35° requires 7.7 B.t.u. (one pound times the 10° temperature difference times .77, the specific heat of lean beef). The heat of fusion of beef is 100 B.t.u. per pound so that it will be readily seen that if beef is to be frozen from, say 42° we must first remove the sensible heat of 7.7 B.t.u. per pound and then the heat of fusion 100 B.t.u. per pound, or a total of 107.7 B.t.u. per pound. In addition we must cool the frozen beef down to about zero which requires 12.8 B.t.u. per pound (32° tem-

perature reduction times .40, the specific heat of lean beef, after freezing).

Thus to cool 42° lean beef to the freezing point (which we have assumed as 32°—not quite true, but close enough for our purpose), freeze it and then chill it down to zero requires 120.5 B.t.u. per pound. Compare this with the sensible heat only of 7.7 B.t.u. per pound to cool the beef from 45° to 35° only (without freezing) and it will be seen that to freeze the beef requires over 15 times as much heat removal capacity (refrigeration) as to merely cool it.

The refrigerating equipment for cold storage rooms is sized to keep the food cold that is sent to the cold storage room already cold or, if the beef has warmed up a few degrees in transit, to cool it back down, but certainly the equipment was not designed nor sized to provide 15 times that much refrigeration which is what would be required to cool an equal amount of beef 10° and freeze it and then reduce the temperature of the frozen food to 0° F.

So, equipment that has been provided for 0 to 10° rooms for holding pre-frozen foods is greatly lacking in capacity to freeze food in quantities.

THE "KNOW HOW" IN FREEZING FOODS

There are other factors in freezing foods besides merely subjecting them to sub-freezing temperature. There are certain types of foods that are not frozen successfully, or rather are not usable or palatable when they have been thawed. Citrus fruits and tomatoes are in this category. Of the foods that can be frozen there are certain varieties that are much

more successfully frozen than others.

Peas are a good example. One variety of peas is especially adaptable to freezing, although many varieties do not turn out so well. Before the foods are frozen they must undergo a special method of preparation for the freezing process; some foods must be "blanched" before they are frozen.

To be most successfully frozen, some foods, notably vegetables such as peas and corn, must be frozen within ½ hour to one hour after they have been picked, which necessitates a control over the acquirement of the foods that is rarely exercised by supply departments. Some foods require especially fast freezing at very low temperatures, others may be successfully frozen at a much slower rate. Some foods must be wrapped in special papers.

Freezing of foods requires a "know how"—a special technique that cannot be acquired over night, nor from a text book but is the result of much and extended experience.

A WARNING

Some people have expressed disappointment with the quality of the foods from their gardens that they have frozen. Their disappointment is largely due to one or all of the above factors. They either tried to freeze foods that were not adaptable or they did not employ the correct temperature or technique. The frozen food industry has a great future but it can easily get a "black eye" from attempts to freeze foods without proper equipment and without sufficient knowledge of the processes to be employed.

THE RECALIBRATOR



OUTSTANDING FEATURE OF AN OUTSTANDING GAUGE

Marsh has been building gauges for more than 75 years—gauges which today offer the utmost in accuracy and stamina. That "Recalibrator" is the finishing touch—your assurance that accuracy is locked in for keeps. Standard in all Marsh Dial Thermometers, available in all Marsh Gauges.

KEEPS "on the beam"....

Gauges and Dial Thermometers that get off their course—that don't reveal true operating conditions—just don't fit in today's picture. Yet not even Marsh has ever been able to build a gauge that can't be knocked out of adjustment.

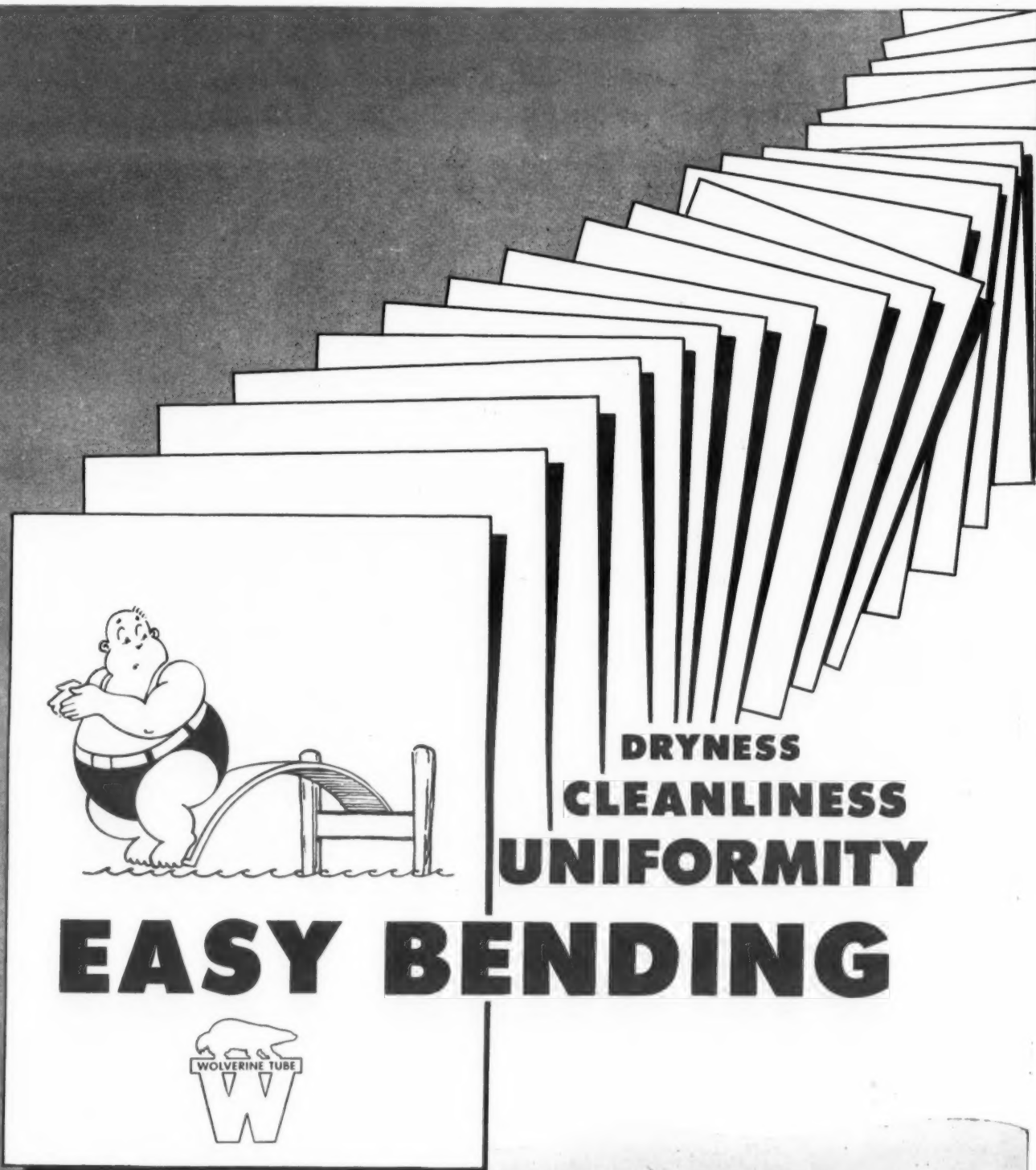
That's where the "Recalibrator" makes the big difference. It's the first completely satisfactory and convenient way to correct a gauge when inaccuracy develops.

The name tells how it differs from ordinary "adjustments". A twist of the "Recalibrator" screw actually recalibrates the instrument, by re-establishing proper relation between bourdon tube and movement—puts the gauge back "on the beam" throughout its entire range.

JAS. P. MARSH CORP., 2067 Southport Ave., Chicago 14, Ill.

MARSH

Refrigeration Instruments



**DRYNESS
CLEANLINESS
UNIFORMITY**

EASY BENDING



all
**You get these qualities in
WOLVERINE COPPER TUBING**

WOLVERINE TUBE DIVISION of CALUMET & HECLA CONSOLIDATED COPPER COMPANY
1411 CENTRAL AVENUE DETROIT 9, MICHIGAN



"NO-FROST" METHOD WITH SPRAY COOLERS

... gives always full capacity because there is no interruption for defrosting at sub-zero temperatures; protects quality in foods.

NIAGARA BLOWER COMPANY
25 Years of Service in Air Engineering
Dept. AC, 8 E. 40th St., New York 17, N. Y.

NEW 1944 CATALOG



Write for copy on your letterhead

Washing Machine Parts Catalog will not be issued in 1944

SERVICE PARTS CO.
2511 Lake St. Melrose Park, Ill.

Army Air Conditions Operating Rooms & Wards in Hospital

5 Unit Air Conditioners Supply System Installed At Percy Jones Hospital

By C. Dale Mericle

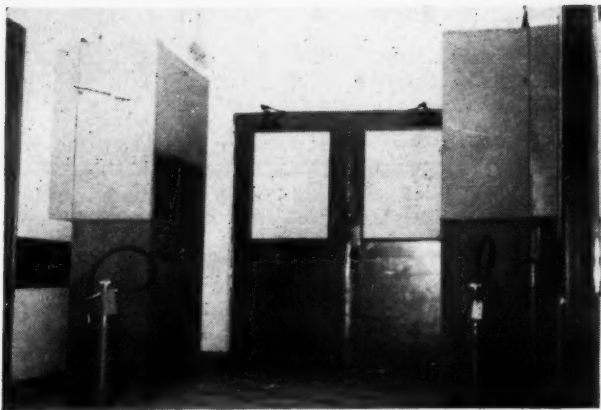
BATTLE CREEK, Mich.—To provide better working conditions for the Army surgeons and assisting personnel in operating, anesthesia, and orthopedic rooms at the Percy Jones General Hospital here, and to promote recuperation of patients, a comfort cooling air conditioning system has been installed in the anesthesia, operating, and post-operative recovery rooms of the hospital.

Five Chrysler Airtemp unit air conditioners, totaling 23 hp., are connected to air distribution ducts for the rooms, making the installation a five-zone central system in effect.

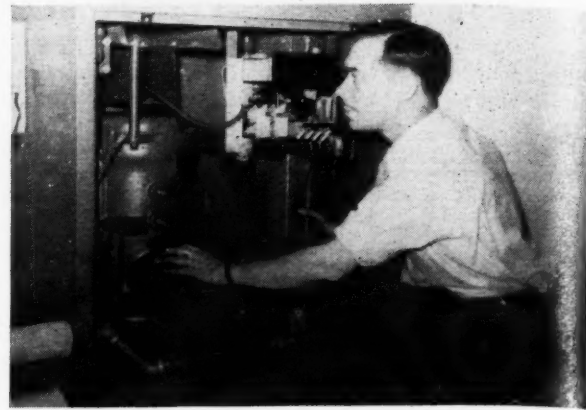
Engineered and designed by Dan H. Lewis, owner of Lewis Engineering Service, Detroit dealer for Airtemp, the system was installed by the hospital maintenance crew under the direction of Glenn F. Merriam, power plant superintendent and associate mechanical engineer, and Ralph Stowitts, foreman of the hospital's sheet metal department.

One 5-hp. conditioner supplies cooled and humidified air to two operating rooms, one of which is double size and contains two operating tables, and is hooked up to permit excess conditioned air to spill into the adjacent sterilizer room.

Another 5-hp. unit conditions two



(Left) These two 5-hp. Chrysler Airtemp unit conditioners, installed in the corridor outside operating rooms at the Percy Jones General Hospital, Battle Creek, Mich., supply 100% fresh, cooled, and humidified air to four operating rooms and the sterilizing room. (Right) Dan Lewis, designer and engineer of the system, tests high and low side temperatures while putting one of the five conditioners into operation.



other operating rooms. A third 5-hp. machine cools two anesthesia rooms and an orthopedic room. The fourth 5-hp. conditioner handles both wings of a 14-bed post-operative recovery ward for enlisted men as well as the office for the nurses in charge of this ward while the 3-hp. machine supplies conditioned air for the 6-bed post-operative recovery ward used by officers.

The four larger units supply 100% fresh air, with the only recirculated air being handled by the 3-hp. machine, which picks up air from the enlisted men's recovery ward and re-cools it for delivery to the officer's recovery ward.

All condensers are water-cooled, water being supplied from the deep-

well system furnishing water to the whole hospital.

The two conditioners for the operating room zones are located in the corridor on the sixth (and top) floor of the wing of the building, just outside the operating rooms.

These units are set about 4 inches out from the wall, permitting the fresh air intake ducts to come down behind the conditioners. Fresh air is pulled in through intakes on the roof and carried through ductwork in the attic space just above the ceiling. The fresh air duct is manifolded and equipped with eight 20 x 20 x 2 in. viscous air filters with individual fresh air connections to the four large conditioners.

Intake ducts also have a manually operated damper to regulate air flow to the conditioning units. Conventional canvas connections are incorporated between the conditioners and the ductwork to prevent transmission, and the resultant amplification, of vibration noises.

HIGH HUMIDITY MAINTAINED

Designed to produce an 80° dry bulb temperature with the outside condition at 95° dry bulb, the two units for the operating rooms are also equipped with special humidifying equipment intended to maintain 50% relative humidity. Maintenance of comparatively high relative humidity, as well as the introduction of 100% fresh air, with frequent air changes is a must for operating room installations, because anesthetics are highly explosive.

A constant fresh air supply prevents concentration of anesthetics in the air from reaching too high a point, and a high humidity lessens the possibility of a static spark, which might produce an explosion.

Humidifying equipment in these two units consists of three spray nozzles on a 1/2-in. water line which send a fine spray over the evaporator coil in the upper portion of the self-contained conditioner. At 40 lbs. water pressure these nozzles spray about 3 gals. of water an hour. In

the humidifier line just outside the cabinet are placed a pressure-controlling valve, water pressure gauge, and a relief valve.

Operation of the humidifying equipment on each conditioner is controlled by a hygrostat located in the operating room. Humidifying will probably be done chiefly during the winter, since relative humidity is generally sufficiently high in summer to prevent static sparks.

About 1,250 c.f.m. of air is supplied by one unit to the No. 1 and 3 operating rooms, with spill-over air going to the sterilizing room. Ductwork carrying the conditioned air is insulated with 2 in. of balsam wool wrapped with insulating waterproof paper.

VENTURI TYPE OUTLETS USED

Air outlets used throughout the system are Barber-Coleman venturi-type units. Those in the operating rooms are placed directly above the large fixtures for the operating table lights. Such an arrangement eliminates any draft from striking the patients, surgeons, and nurses and provides good air distribution.

The No. 1 operating room is approximately 20 x 35 ft. with a 10 ft. ceiling. This room contains two operating tables, and has two air outlets, one over each of the operating table light fixtures.

Thermostats to control the operation of the conditioning equipment are located in each zone supplied by the units.

The No. 3 operating room, approximately 15 x 20 x 10 ft., has only one operating table and air outlet. It is identical in size with the No. 4 room, supplied by the other conditioner in the corridor, which also handles the No. 2 operating room, a double-size room equipped with two tables, as is the No. 1 room.

Air from the sterilizing room is exhausted by a centrifugal type blower. The sterilizing equipment is placed along one side of this 10 x 20 x 10 ft. room, and a hood

(Concluded on Page 23, Column 1)



DEMAND PRECISION COOLING TOO

FOR PROCESSING... FOR STORAGE!

Point to any step in the frozen foods industry—from grower to consumer. You'll find that accurately controlled temperatures are vital... Precision cooling means savings through economical use of refrigeration equipment... savings by eliminating food spoilage.

Whether you are concerned with the processing or storage of frozen foods or controlling temperatures in

a locker plant, there is a Minneapolis-Honeywell Refrigeration System to meet your needs.

Write for complete information about how the Polartron System can help you. Or ask to have an M-H engineer consult with you. No cost or obligation in either case. Minneapolis-Honeywell Regulator Co., 2807 Fourth Avenue S., Minneapolis 8, Minnesota.

THE POLARTRON SYSTEM OF FROST-FREE REFRIGERATION

MINNEAPOLIS
Honeywell
REFRIGERATION CONTROL SYSTEMS

Superior QUALITY FITTINGS

... designed especially for use in refrigerating systems where they must withstand wide fluctuations in temperature, plus considerable vibration. Machined from brass forgings and relief-annealed extruded brass rod to assure uniform density—maximum strength—freedom from season cracking—total absence of seepage leaks.

All threads machined to medium fit (SAE Class 3). Flare threads and faces protected by cardboard ferrules.

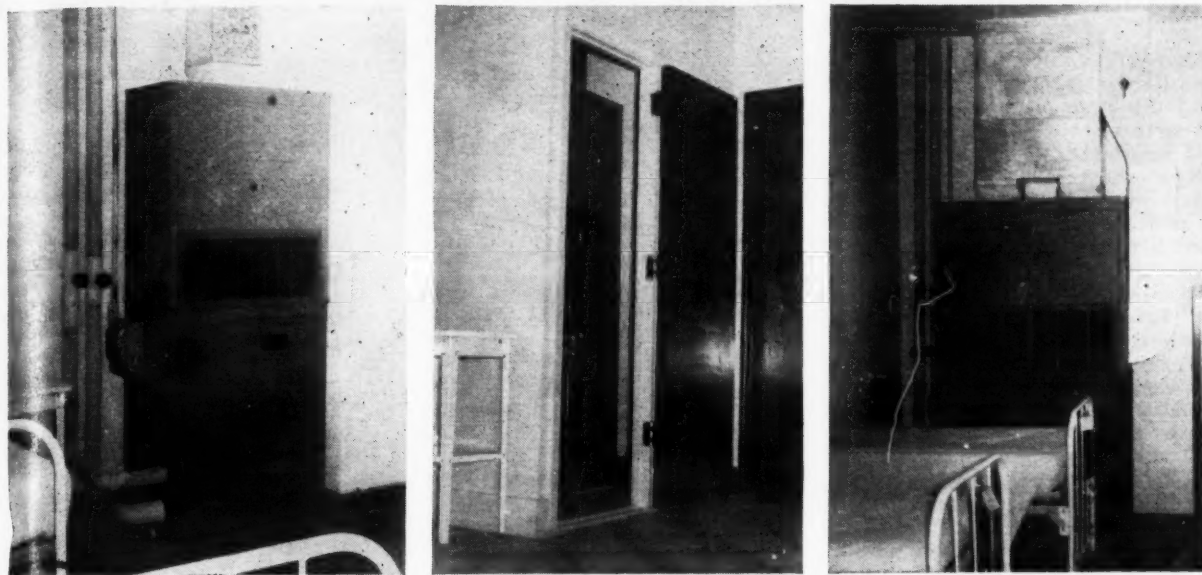
SUPERIOR QUALITY FITTINGS are recommended for, and used extensively by, refrigeration, machine tool, marine, retinning, liquefied petroleum gas, and many other industries.

Members of the Refrigeration and Air Conditioning Engineers Association and the Society of Automotive Engineers

IF YOU HAVEN'T A COPY OF CATALOG R2, REQUEST ONE TODAY

SUPERIOR VALVE & FITTINGS COMPANY
PITTSBURGH - 26 - PENNSYLVANIA
OFFICES IN PRINCIPAL CITIES - WEST COAST STOCK - LOS ANGELES (781) - JOBBERS EVERYWHERE!

How Unit Conditioners Are Connected to Duct Systems



Unit at the left is a 3-hp. unit in the enlisted men's recovery ward which sends conditioned air through the duct on top to the officers' recovery ward across the hall. Center view shows the plenum chamber that was built around the unit handling air for two anesthesia rooms and the orthopedic rooms. At right is the 5-hp. conditioners which cools the 14-bed enlisted men's recovery ward. This unit uses 100% fresh air.

Cooling of Post-Operative Recovery Wards Expected to Aid Recuperation of Patients

(Concluded from Page 22, Column 5)

over the equipment collects the hot, humid air and carries it to the exhaust system.

Cooling for the two anesthesia rooms and orthopedic room is furnished by a 5-hp. unit set up in a plenum chamber which was constructed around the conditioner after it was installed in one of the anesthesia rooms itself.

In the 15 x 15 x 10 ft. anesthesia room where spinal, pentothal, and intratracheal anesthetics are administered to patients preceding operations, a 4 x 6 ft. plenum chamber was built around the conditioner after the latter was installed. Constructed of 2 x 4's wall board, metal lath, and plaster, the chamber has been painted and finished to blend with the room so that it appears to be a closet. Access to the unit is by a door fully weather-stripped with controls extended to the outside conditioned area.

This unit, too, is supplied with 100% fresh air through an opening in the ceiling of the plenum chamber which is connected to the fresh air manifold. No humidifying equipment is incorporated in this conditioner, nor is there any air exhaust system in this zone. It is merely necessary to raise outside windows slightly to provide for air exhaust by static pressure.

Through small venturi-flo air out-

lets located above the light fixtures is supplied 2,000 c.f.m. of conditioned air to the first anesthesia room, the second room where ether is given to patients before operations, and the 15 x 15 x 10 ft. orthopedic room used for the preparations of casts, bandages, etc.

The 14-bed enlisted men's recovery ward is air conditioned by another 5-hp. machine. This ward is the shape of a wide "U," about 120 ft. long, 20 ft. wide, and 10 ft. high. A seven-bed section at one end of the ward being more or less divided from the seven-bed section at the other end by an office for the nurse in charge.

At one end of the ward is the conditioner which supplies 400 c.f.m. of 100% fresh conditioned air to the two sections of the recovery ward and the nurses' office. Air conditioned post-operative recovery rooms have proved beneficial to the patients who are brought in immediately after operations to recuperate sufficiently before going back to general wards.

At the other end of the recovery ward is the 3-hp. unit for the officers' recovery ward, which is located across the corridor. This unit is not supplied with fresh air, but recirculates 160 c.f.m. of the conditioned air through ductwork in the attic to the six-bed officers' room.

The nurses in charge of the post-operative recovery ward must keep

close watch on their patients during the critical stages immediately following operations. Their office is glass-enclosed so they can see all the patients, but they also must be able to hear the patients if they should call or make any noise indicating that they require immediate attention. For this reason hospital authorities are planning to install sound-insulating material around the units in the post-operative recovery ward to prevent any possible mechanical noise from interfering with the nurses' hearing.

WPB Outlines Current Position on Various Forms of Refined Copper

WASHINGTON, D. C. — Outlining the current position of copper and copper products, WPB said last week that production of refined copper during the first quarter of this year fell below previous estimates, primarily because of manpower difficulties.

The supply of unalloyed copper scrap, red brass scrap, and composition scrap continues to be insufficient to meet the requirements of producers of military and essential civilian items, WPB said. Even in the case of brass rod turnings, there appears to be no excess supply over present requirements.

The position as far as controlled materials are concerned was described by WPB as follows:

1. It is anticipated that alloy strip production will be slightly lower than the current rate primarily because of summer heat and a small reduction in military demand. It is hoped that reduced production of alloy strip will release casting capacity for production of alloy rod and tube.

2. Alloy rod is expected to remain extremely critical through the end of the third quarter because of increased demand for all sizes.

3. The position of alloy tube is expected to remain critical through the end of 1944 because of accelerated military programs. Facilities as well as manpower will limit the production of this product in certain sizes.

4. The demand for unalloyed copper products appears to be approximately in balance with supply.

5. Copper wire and cable as a whole are in tight supply. Production as limited by such factors as loss of manpower, short supply of cotton and asbestos yarn, and the necessity of working with new and as yet unproven materials for electrical insulation.

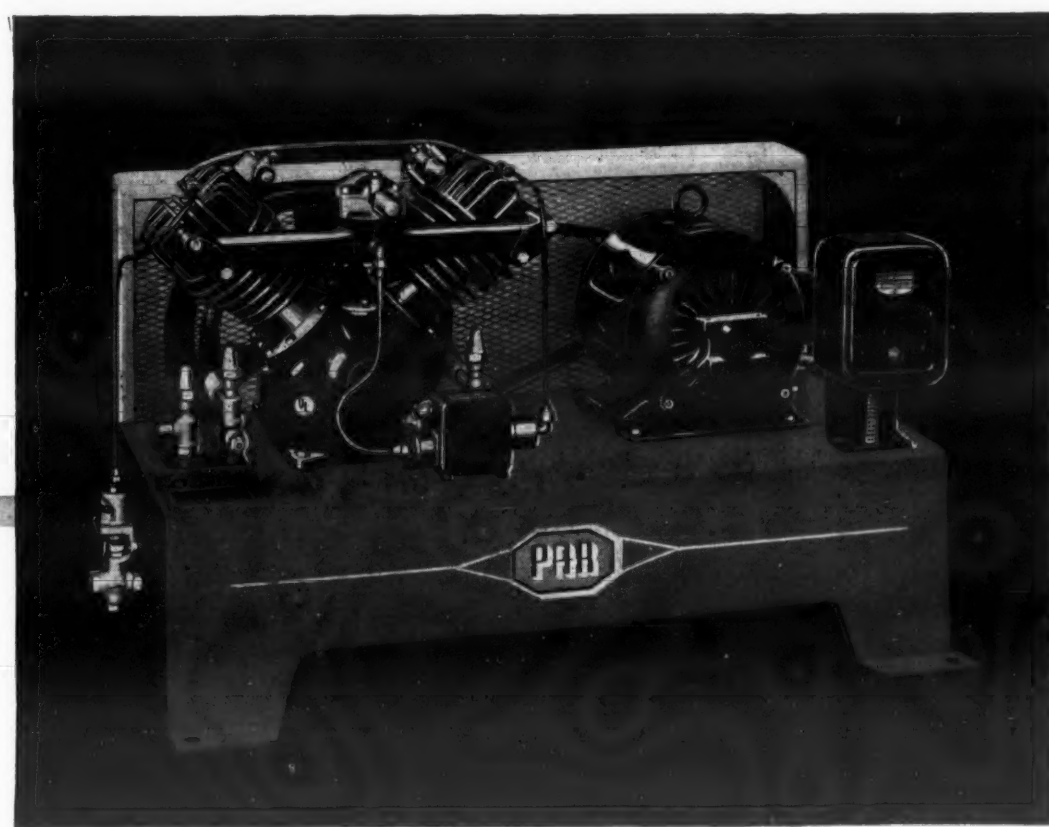
6. Certain classes of foundry products remain tight. Requirements for brass and bronze castings can be met provided there is no substantial loss of manpower.

11 Dallas Trainees Now Active In Repair Work

DALLAS—Eleven men who completed the refrigeration service training course conducted here April 3 to May 5 by the Local Refrigeration Service Council are now doing repair work for the employers who paid them while attending school.

Classes were conducted during the day at the Dallas War School, which trains people for other vocations and assisted in the refrigeration course, reports J. H. Appeson, chairman of the Local Council. Twelve men enrolled in the class originally.

Following graduation exercises and the dinner for graduates held May 5, Mr. Appeson announced plans for additional classes, probably to be held at night, for both beginners and men already in the field. Chief problem, says Mr. Appeson, is finding capable instructors who have the time to devote to classwork.



Par Model HW-50

- A brute for heavy work on locker plant, ice cream plant and super market installations.
- 5 H.P. 4 cylinder water cooled unit with fast pull down and high capacity.
- For economical operation this large capacity, slow speed unit can't be beat.

● Write for illustrated brochure of details.

● BY COMPARISON—YOU'LL BUY PAR.

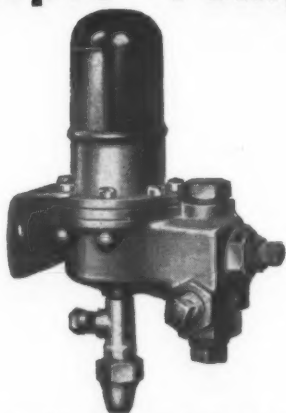
PAR Division

LYNCH
MANUFACTURING
CORPORATION
Defiance, Ohio, U.S.A.

SNAP ACTION VALVES for Multiple Temperature

Adjustable from 20" of vacuum to 63 lbs. pressure

Proven in Performance



Differential 7 lbs. minimum to 29 lbs. max.

Free from bellows strain]

Here is a marvelous precision valve designed for systems with more than one coil, operated from the same compressor. Any variety of units such as ice cream cabinets, soda fountains, back bars, water coolers, candy counters, beer coils, storage rooms, etc., may be connected to a single compressor unit by the use of an Aminco Snap Action Valve.

This means more today than ever before, what with the difficulties experienced by the serviceman in satisfying his trade with "too little" material for the work to be done.

Aminco Snap Action Valves are not an experiment. They have proven their worth in years of actual service and are doubly useful under today's conditions when one piece of equipment must do the work of several.

May be used with any refrigerant except ammonia. For flooded as well as dry gas types or any combination of either.

As always, our company is definitely interested in the survival of the refrigeration industry and is doing its utmost to cooperate with established operators.

AMERICAN INJECTOR COMPANY
148 1/2 Fourteenth Avenue DETROIT 16, MICHIGAN

Van D. Clothier, 1015 E. 16th St., Los Angeles, Calif.
George Boone, 739 G. M. Bldg., 1775 Broadway, New York 19, N. Y.
William H. Cody, 2nd Unit, 10th Floor, Santa Fe Bldg., Dallas, Texas
Export: Borg-Warner International Corp., 310 S. Michigan Ave., Chicago, Ill.

25% Gain In Number of Locker Plants Predicted For Michigan

EAST LANSING, Mich. — Special allocation of building materials by the WPB will make possible a 25% increase in the number of frozen food locker plants in Michigan this year, Howard J. Knapp of Lansing, president of the Michigan Frozen Food Locker Assn., told members attending the annual two-day conference on the Michigan State College campus.

Knapp stated that there are now 97 plants operating in the state, adding that 23 new plant or expansion programs are now under way. He indicated that more could be expected in the near future.

Association members attending the session agreed that the wrapping paper situation is "not too serious," but may become so unless an increased amount of pulp wood is made available. Knapp pointed out that the

answer to the wrapping paper shortage might be found in the use of other materials for wrapping.

Knapp reported that a great deal of interest was being displayed in the community processing kitchens being promoted by the War Foods Administration. H. B. Bolin of Chicago, WFA representative appearing on the program, told representatives that priorities are available for materials to install such centers where Victory gardeners and others will can and package their fruits and vegetables for freezing.

Albert Guggendahl of Des Moines, Iowa, secretary of the National Frozen Food Locker Assn., discussed accomplishments of the organization to date and revealed plans for the future. Work in the field of Farm Cooperative Locker Assn. was outlined by Leon Brudner.

Kentucky Operators Form Locker Assn.

LEXINGTON, Ky. — Organization of the Kentucky Frozen Food Locker Assn., the first organization of its kind in this state, was effected during a meeting of frozen food locker managers held following a banquet arranged in connection with a two-day locker short course which concluded here recently at the University of Kentucky.

Named officers of the new group were: President, W. F. Sutterlin of Frankfort; vice president, S. A. Belt of Paris, and secretary-treasurer, Mrs. Susan Ward of Versailles. The association was formed by representatives of 30 of the 37 frozen food locker plants in the state.

J. B. Kelley, head of the university's agricultural engineering department, arranged the short course and presided at all sessions. Emphasizing the rapid growth of frozen food locker plants in Kentucky, he pointed out that the first plant in the state was established in October, 1940, with the number increasing to 18 last year and 37 at present.

Kenneth F. Warner, extension meat specialist with the U. S. Department of Agriculture, predicted in one of the short course addresses that immediately after the war "many kinds and types of frozen food equipment will be in use on both a family and commercial scale."

Describing a frozen food locker as a "vital public service," Warner added: "A frozen food locker company is just as much a public institution as the courthouse and the church and not just another store."

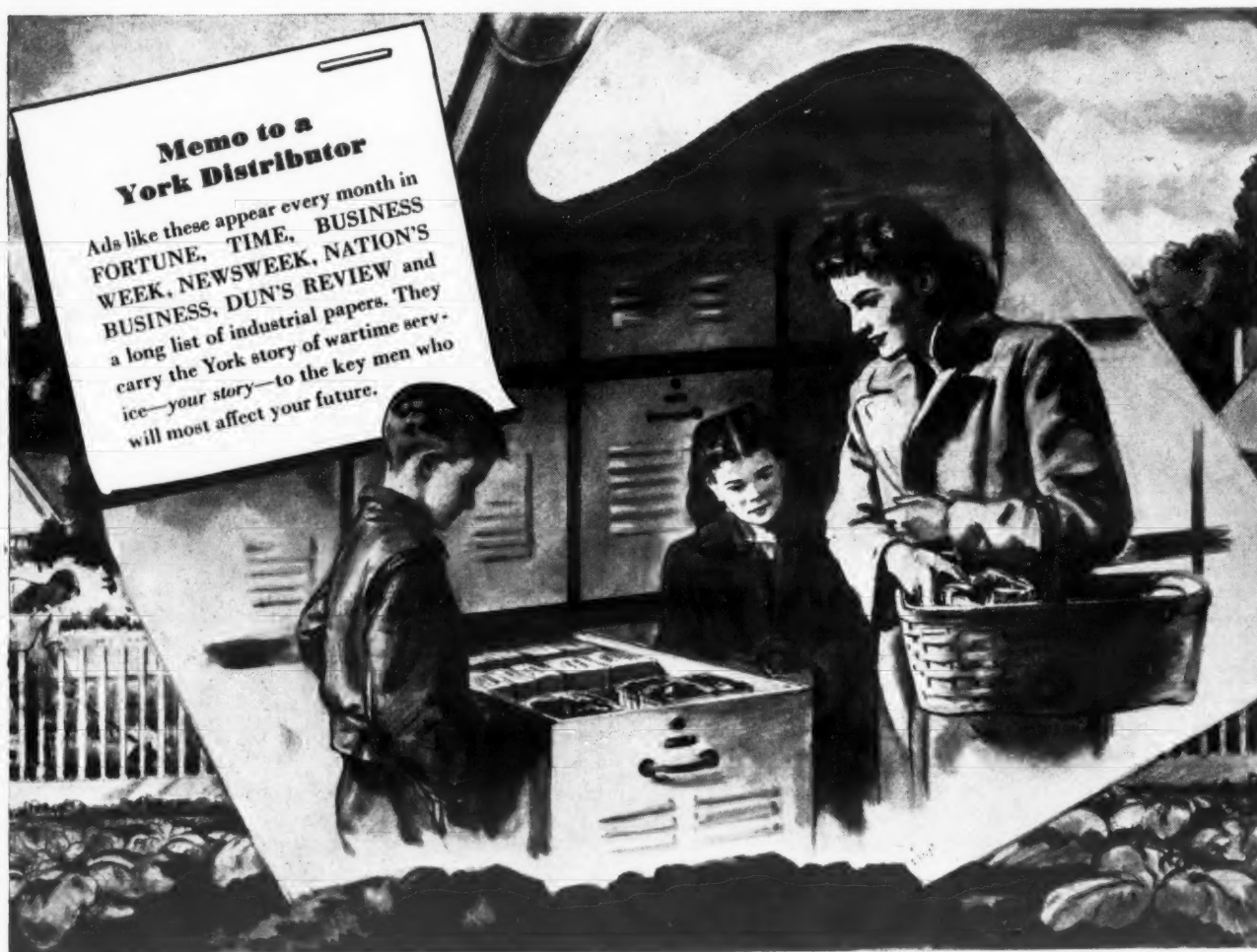
Cold Storage Space So Valuable An Old Railroad Tunnel May Be Converted For the Purpose

STAUNTON, Va. — William H. Boozer, special freight representative of the Chesapeake & Ohio Railway at Staunton, Va., confirmed a report that the road was contemplating leasing the old Blue Ridge tunnel at Afton for cold storage purposes.

Boozer said the project is now under consideration. If the proposal goes through, many tons of fruits and garden produce could be preserved the year round. The natural temperature of the tunnel is 56° F.

and, with some mechanical conditioning, could be reduced to lower reading. The tunnel is brick-lined, 4,000 feet long, and presumably could be supplied with air ducts so that fresh air could be pumped in to prevent mold and rotting caused by stagnant air.

Charlottesville and Waynesboro orchardists are said to have made tentative proposals to the C. & O. and Staunton warehouse interests and growers may participate.



New World... AT THE END OF A HOE!



Next to the weather, "frozen foods" is probably the most popular topic of conversation among Victory gardeners today.

The new gardeners... thrilled by the flavor and freshness of their home grown produce... are

increasingly aware that freezing provides the means of capturing true food-goodness at its sunny peak and holding it for year-round enjoyment.

Because America has tasted frozen foods and found them good, both city and country dwellers anticipate steadily increasing varieties... either home grown or purchased in economical quantities... frozen and stored for future use in locker plants or in the home.

Since the days of the first quick freezing experiments in 1928, York has supplied technical information, manpower, and apparatus to pioneer and develop the frozen foods industry to its present vital importance.

Today, York's facilities and experience are given over to the production of mechanical cooling for the Armed Forces... also for the War Food Administration Program of which frozen food locker plants are an important part.

Tomorrow, York will provide the leadership to create a new world of greater food-enjoyment for a happier, healthier people.

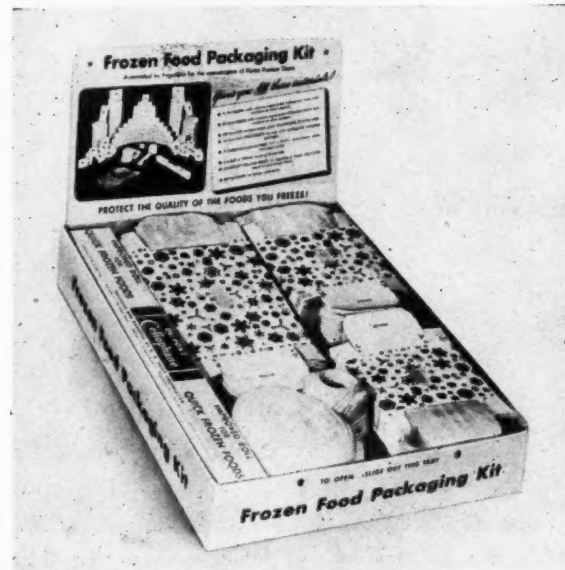
York Corporation, York, Pennsylvania.



YORK REFRIGERATION AND AIR CONDITIONING

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

Frigidaire's 'Frozen Foods Packaging Kit' Will Be Big Step In Improving 'Home Frozen' Foods Quality



Frigidaire's kit for the correct packaging of frozen foods has all kinds of proper packaging materials, an instruction folder, and a record book for "inventorying" of the foods. Officials of the company believe it will be important in building good will for refrigeration by improving the chances of the home freezer or locker user in getting a good finished product.

DAYTON, Ohio—A Frozen Food Packaging Kit providing proper materials for packaging everything in the home freezer has been introduced by Frigidaire Division of General Motors, and will be sold through Frigidaire dealers, announces P. M. Bratten, general sales manager.

The kit is a carefully planned assortment of cellophane-lined boxes, cellophane bags, roll cellophane, stockinette, and other approved packaging materials, in addition to a record book for keeping an inventory of foods in the freezer, and an instruction folder showing how to use the packaging materials and giving general hints on frozen foods.

"We emphasize the words 'approved packaging materials,'" says Mr. Bratten. "Extensive surveys conducted as part of our continuous food research program have shown us that many people are not getting as perfect results from their home freezers as they might be—simply because they are not packaging food properly before storing it."

"This kit has been developed to bring home freezer users the benefits of Frigidaire's years of frozen food research, and to provide them in one convenient kit moisture-vapor-proof packaging materials suitable for home freezer use," he explained.

Enough material for approximately

175 items of frozen food is included in the kit. There are 75 pint and 40 quart cellophane-lined boxes, a 100 ft. roll of 18 inch cellophane, 15 large 6 lb. cellophane bags, a 50 ft. roll of stockinette, and a ball of twine. All cellophane in the kit is of the moisture-vapor-proof type.

By distributing the kit through Frigidaire dealers, explains Mr. Bratten, "We are enabling our dealers to build additional customer goodwill, and to help associate themselves with the home freezer business."

The kit is put up in an attractive self-display box and is shipped in a corrugated carton which can also be used for handy storage of the packaging materials in the home.

Included in the kit is an inventory record book, which has ample space for recording the description of the food stored, the date, quantity, where stored, and removal record.

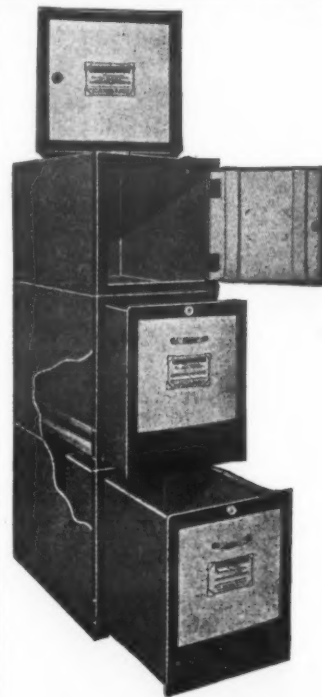
Extra copies of the instruction folder which accompanies each kit are being supplied to dealers for use as sales literature on the kit itself. Excellent illustrations in the folder show the step-by-step method of packaging food for freezing in both boxes and the cellophane-stockinette combination.

In addition the folder advises on the proper storing of foods in the home freezer and contains tips on preparing and freezing of foods.

The Need For Our Food Was Never Greater!

Our Armed Forces require 13% to 14%; Civilians get 75%; our Allies get 11% to 12% and the liberated nations look to us. Food fights for freedom—so back the attack by providing all the storage space you can. Equip with

MASTER FOOD CONSERVATORS



They are solidly built of STEEL by men who pioneered the industry. They have features that assure profitable and economical Locker plant operation. It costs no more to get the "Choice of the Industry."

Write, Phone or Wire

your requirements. Safeguard your investment by installing the first-cost, last-cost completely STEEL unit. Details on request.

Endorsed by and sold through distributors of refrigeration and insulation.

Master Manufacturing Corp.
121 Main St. Sioux City 4, Iowa

Member of Frozen Food Locker Manufacturers and Suppliers Ass'n. organized for your protection.

Over 400,000 Master Food Conservators in Use

In Jersey City Post



L. GALE HUGGINS

Westinghouse Names
Air Conditioning Staff

(Concluded from Page 1, Column 5)

in 1915 and served in various engineering capacities until in 1936 he went to the Mansfield works of the electric appliance division as application engineer in the air conditioning commercial department and was later assigned to the East Springfield, Mass., Works. Mr. Goodwin was assigned to air conditioning at the Elevator Co. late last year.

Howard A. Blair joined Westinghouse as a graduate student at East Pittsburgh in 1929. In 1931 he was assigned to the East Springfield



WALTER C. GOODWIN

field, Mass., Works. Mr. Goodwin was assigned to air conditioning at the Elevator Co. late last year.

Howard A. Blair joined Westinghouse as a graduate student at East Pittsburgh in 1929. In 1931 he was assigned to the East Springfield



HOWARD A. BLAIR

works as test and development engineer for air conditioning and refrigeration apparatus. In 1934 he left the company to become service manager of the Metropolitan Air Conditioning Corp. in New York City, returning the following year to the Westinghouse Mansfield works as air conditioning and refrigeration service engineer.

From 1930 until he came to the Jersey City plant a few months ago he was assistant to the service manager, electric appliance division, located at East Springfield, and was responsible for the servicing of all products manufactured at that plant, including air conditioning.

Gov. Dewey Says
Home Freezers Will
Help Public's Diet

(Concluded from Page 1, Column 3) the family's Thanksgiving dinner, which had been planned for the farm but did not take place there.

"The day will come," he predicted, "when every one can have a deep-freeze unit, just as every one now can have a refrigerator."

He also pointed out that community freezer-storage lockers could be made available so that everybody in a community could enjoy the benefits of acquiring food when it is cheap and plentiful and storing it for future use. Such lockers will prove of value in food saving and year-around balancing of family diets, he said.

Asserting that deep-freezing was "only a small aspect of what can be done," he assured Mr. Stanley that "all of the technical and special skills of state departments in the fields of agriculture, labor, commerce, and purchase" would be available to the food commission in formulating the proposed program.

The objectives of improving the standard of living on the farms and of bettering the diets of city dwellers were described by the Governor as in "complete harmony." About one-tenth of the country's population lives in New York State, he said, and this great group of consumers has for years depended largely on the farmers of the state for such essential foods as fresh milk, eggs, and fruits and vegetables.

"The state's over-all problems," he declared, "would seem to be mainly those of abundant production of these foods, the improvement of their nutritional qualities, and the development of such processing and distribution techniques as will provide the state's consumers with larger quantities of essential foods without burdening producers with undue wastage or ruinous surpluses."

"Such a program cannot be planned from the top down. It must be product of research, education, and intelligent, voluntary cooperation of all groups concerned."

The Governor feels that the State Emergency Food Commission can start farmers, consumers, processors, and distributors working together.

Industry Tells WPB
Repair Parts Are at
'The Danger Point'

(Concluded from Page 1, Column 5)

The committee received a report from WPB officials on the current availability of "Freon-12." The supply of this item continues to be short, and May allocations will not provide for any but the most essential uses.

The industry group discussed the practices which are followed by the WPB appeals board in considering appeals under Order M-28, the "Freon" use restriction order.

A directive issued to Kinetic Chemical Company, further restricting its deliveries of F-22, another of the Freon gas family, was discussed by both committee members and WPB officials as indicating the general trend in supply of F-22.

The committee reviewed a recent amendment to Limitation Order L-38, which provides that regional and district WPB offices may process Form WPB-1319 applications for certain types of air conditioning and refrigeration equipment. In connection with this new procedure, it was announced to the group by WPB officials that a meeting will be held in Washington with WPB field office representatives to assure a uniform processing procedure for these forms.

Lt. Col. K. D. Pulcifer of National Selective Service Headquarters discussed the manpower situation which affects the industry in the light of recently revised Selective Service regulations. He outlined the procedure which industry members should follow in appealing for deferments.

Nash-Kelvinator Official



GODFREY STRELINGER

Recently elected treasurer and assistant secretary of Nash-Kelvinator Corp.

"Refrigeration Service Shops should prepare NOW for the heavy demand for their services"

WPB BULLETIN

Maybe in past years you have not been accustomed to stocking parts and supplies to take care of your summer "peak," but this year WPB urges you to anticipate as far in advance as possible. That means just one thing: Go through your

AIRO CATALOG, page by page, and order your needs today. Of course, if you haven't a copy of AIRO's Victory Catalog, we'll send you one promptly. (Please write on your letterhead.)

AIRO SUPPLY CO.

Wholesale Refrigeration Parts, Equipment, and Supplies
Dept. B, 2732 N. Ashland Ave., Chicago 14, Ill.

Your refrigeration parts and supply house in Central New York and Northern Pennsylvania

TED GLOU

CENTRAL SERVICE SUPPLY CO.

409 E. Jefferson St., Syracuse, N. Y.

Phone 5-4000

209 Jefferson Ave., Scranton, Pa.

Phone 3-4000



"WHAT APPLIANCE ARE MOST PEOPLE GOING TO DEMAND FOR THEIR POSTWAR HOMES?"

"THAT'S TOO EASY—**Deepfreeze**"

Because only **Deepfreeze** offers 100% PRIMARY FREEZING SURFACE... guards foods against dehydration!

Ask the next customer who comes into your store, "What frozen food appliance are you going to buy for your postwar home?"

99 times out of 100 he'll say, "Deepfreeze"—quickly, positively.

There are mighty good reasons for this universal acceptance of Deepfreeze as the standard of value.

High among those reasons is the 100% primary freezing surface of Deepfreeze. Mark this point well. A solid wall of direct-action freezing surface entirely surrounds each Deepfreeze food storage chamber.

Deepfreeze design does away with heat absorbing units in food storage chambers. No heat passes through food. And the temperature differential

between refrigerant and food storage chamber approximates only 2 degrees!

This means high efficiency, low operating cost, retention of food moisture, no dehydration. Foods stay farm-fresh when preserved the Deepfreeze way!

No postwar experiment, Deepfreeze is thoroughly proved by over six years' successful performance in thousands of American homes.

This background and the name Deepfreeze will mean money to you—when our war work is finished forever. Meanwhile, full-page Deepfreeze ads in leading magazines continue to build postwar sales for you, reminding your future customers that "It isn't a Deepfreeze unless it bears the name Deepfreeze!"



Deepfreeze... the first successful home freezer, built by the world's largest manufacturer of sub-zero quick freezing frozen food home storage units.

MAIL COUPON NOW!

Motor Products Corporation
Deepfreeze Division, 2322 Davis Street, North Chicago, Ill.
Gentlemen: I am interested in getting full information regarding Deepfreeze postwar selling opportunities.

Name

Title

Company

Address

AWARDED
DETROIT
PLANT

Deepfreeze

TRADE MARK REG. U. S. PAT. OFFICE

MOTOR PRODUCTS CORPORATION

Deepfreeze Division: 2322 Davis Street, North Chicago, Illinois
Main Plant: Detroit, Michigan Canadian Plant: Walkerville, Ontario



Refrigerants have gone to war — are high on the list of vital materials. Don't let hidden leaks waste them.

VISOLEAK is composed of fine refrigerant oils colored and treated to penetrate every nook and cranny of the system, keeping a constant check for annoying, expensive hard-to-find leaks.

If refrigerant can leak out, so can **VISOLEAK** and it will mark the leak with a dark red stain.

VISOLEAK is safe—safe with any refrigerant and effective with systems of all types. It is non-toxic, non-poisonous, non-corrosive and non-inflammable.

VISOLEAK is economical—

| Wholesale Prices | Save 10% on case lots |
|-----------------------------|-----------------------|
| 4 ounce bottle . . . \$1.00 | 48 bottles |
| 8 ounce bottle . . . 1.75 | 24 bottles |
| 1 pint bottle . . . 3.00 | 24 bottles |
| 1 quart bottle . . . 5.00 | 12 bottles |
| 1 gallon can . . . 16.00 | 6 cans |

See your jobber or write for complete information

WESTERN THERMAL EQUIPMENT COMPANY
2181 Angeles Vista Blvd. • Los Angeles 42, California

Please send me complete details about **VISOLEAK**.

Name

Address

DOLE

VACUUM PLATE
COOLING & FREEZING UNITS
CHICAGO

La Crosse Beer Dispensing
Equipment with a
National reputation for
Quality and Performance.
La Crosse Novelty Box Mfg. Co.
LA CROSSE, WISCONSIN

THE EMBLEM OF QUALITY
EBCO
Electric Water Coolers
WRITE FOR DETAILS
The EBCO Manufacturing Company
401 W. TOWN STREET COLUMBUS, OHIO

ELECTRIC WATER COOLERS
ALL SIZES FOR
NAVY AND LAND USE
MEET GOVT. SPECS.
QUICK SHIPMENT
Exclusive Dealer Franchise
MFD. BY
THE REVELATION CO.
L. E. RABJOHN
2801 San Fernando Rd. Los Angeles 41, Calif.

First on the Market First in Sales for You!



Write for New Catalogue
LARKIN COILS, INC. 519 MEMORIAL DR., S. E., ATLANTA, GA.

STANGARD
PRIME SURFACE Cold Plates
FOR MAXIMUM EFFICIENT REFRIGERATION

★ For Locker Plants, Sharp Freezing, Ice Cream Cabinets, Hardening Rooms, Soda Fountains, Storage Rooms, Milk Coolers, Liquid Cooling, Food Counters and other similar uses.
Write us today for complete information and catalog.

Stangard Facilities are contributing to the production of materials for our National Defense.

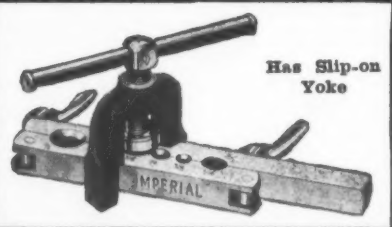
THE STANGARD-DICKERSON CORP.
46-76 Oliver Street, Newark, N. J.

IMPERIAL Flaring Tools

- built to conserve precious minutes
- designed to do a job that's right the first time

Imperial Flaring Tools are especially valuable under current conditions. They help speed up tubing connection work and they make joints that are tight and stay tight.

IMPERIAL BRASS MFG. CO., 565 S. Racine Ave., Chicago 7, Ill.



No. 195-F Flaring Tool. Flares 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. soft copper, brass or aluminum tubing. Yoke is made so that it can be slipped over bar instantly without twisting or turning.

Order Imperial tools from your Jobber

PATENTS

Weeks of May 2 & 9

2,347,642. **REFRIGERATING CABINET.** George D. Reinhardt, San Antonio, Tex. Application Sept. 28, 1940, Serial No. 358,897. 11 Claims. (Cl. 62-101.)



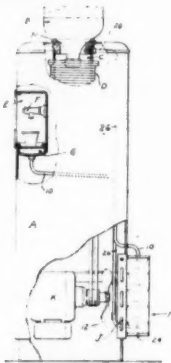
1. A heat exchange cabinet including, an elongate outer casing, a longitudinal deck disposed within the upper portion of the casing and having a plurality of longitudinal channels to receive the articles to undergo heat exchange, means for circulating a heat exchanging liquid within the casing below and above the deck and along said channels in intimate contact with the articles supported thereon, said channels being spaced from each other, a heat exchanging apparatus within the casing including a plurality of coils which extend longitudinally within the casing below the deck, and means for admitting a heat exchange agent to said coils.

2,347,757. **REFRIGERATION.** Albert R. Thomas, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application May 6, 1941, Serial No. 392,090. 4 Claims. (Cl. 261-112.)

1. A cooling tower comprising a casing providing an upright shaft having an inlet for air in the lower part thereof and an outlet for air at the upper part thereof, members in said passage providing liquid bearing surfaces projecting above said air outlet, liquid distribution structure for depositing liquid on said surfaces and forming a liquid film thereon in a zone above said air outlet, said structure including a barrier to flow of air between the zone in which liquid is deposited on said surfaces and said air outlet, said liquid bearing surfaces being substantially continuous in vertical extent in the region of said air outlet so that all the liquid descending by gravity through this region

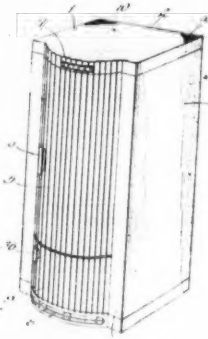
is adherent to said members so as not to be entrained by air flowing from the passage at high velocity, and said surfaces having small gaps at places below said air outlet so that liquid is redistributed on said surfaces by dripping across said gaps, the spacing between said members being proportioned so that the velocity of air is substantially the same on all sides of said gaps so that the dripping liquid is not displaced into the air streams.

2,347,905. **WASTE WATER HUMIDIFIER.** Howard B. Hatt, Philadelphia, Pa. Application Sept. 3, 1943, Serial No. 501,063. 2 Claims. (Cl. 62-141.)



1. In combination with a water-bottle water cooler, a humidifying tray for retaining waste water of the cooler, and means common to both the cooler and the humidifying tray whereby the waste water in the trays will be vaporized; a water reservoir within said water cooler, and means connected to said reservoir and said humidifying trays whereby the flow of water from the reservoir will be controlled by the amount of water in the humidifying trays.

2,347,985. **REFRIGERATOR.** Charles G. Beersman, Evanston, Ill. Application Dec. 15, 1941, Serial No. 422,951. 8 Claims. (Cl. 62-89.)

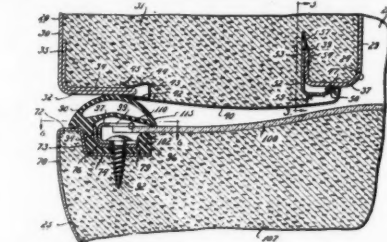


1. A refrigerator comprising a rectangular shaped cabinet, spaced inner and outer circular walls supported therein, a food storage compartment, circular shelves adapted to revolve within said compartment, an ice cube making compartment located beneath said storage compartment, a frozen food compartment located beneath said ice cube making compartment, said compartment also having circular shelves adapted to revolve therein, each of said compartments defined in part by said inner circular wall, a compressor compartment located beneath said aforementioned compartments, a vertical flue in each rear corner of said cabinet leading from the compressor compartment, a door for said compressor compartment and a vegetable bin supported upon said door and extending within said compressor compartment.

2,348,195. **REFRIGERATING APPARATUS.** Earl D. Drake, Grand Rapids, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Original application July 18, 1941, Serial No. 402,901. Divided and this application Oct. 11, 1941, Serial No. 414,581. 1 Claim. (Cl. 220-9.)

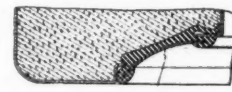
A cabinet construction comprising inner and outer shells having a door opening formed therein, said shells having edge

portions about the periphery of the door opening, the edge portion of the outer shell being bent inwardly toward the inner shell, the edge portion of the inner shell being bent to provide a flange extending toward the outer shell but spaced therefrom, a short returned flange carried by said flange extending rearwardly from said door opening and having an opening therethrough, a clip removably connected to said short returned flange and having a portion extending parallel with and beyond said flange, said portion having a tongue extending through the opening of said returned flange, flaring tongues on said portion engaging the edge of said returned flange for connecting the clip



to said returned flange, said clip having a portion extending substantially parallel with the flange of the inner shell and spaced therefrom, and a breaker strip bridging the space between said shells and having one edge thereof connected to the edge portion of the outer shell and the opposite edge of said breaker strip being bent inwardly, said inwardly bent portion extending between the flange of the inner shell and the portion of the clip which is arranged parallel to said flange for securing the breaker strip in position.

2,348,379. **REFRIGERATING APPARATUS.** Martin J. Gouloze, Grand Rapids, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Oct. 16, 1941, Serial No. 415,186. 1 Claim. (Cl. 220-9.)



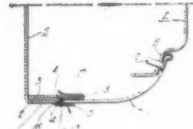
A cabinet construction comprising spaced apart walls having their marginal edges bent to extend toward each other and in spaced apart relation, an insulated flexible breaker strip disposed between said marginal edges and having slits formed in the longitudinal edges thereof for the reception of said marginal edges, a flat resilient member extending over the outer face of said breaker strip, and means on the outer face of said breaker strip adjacent the longitudinal edges of said resilient member, said resilient member being bowed longitudinally to permit the longitudinal edges of said resilient member to engage said means of said breaker strip for urging the longitudinal edges of the breaker strip toward the marginal edges of said walls, said means on the face of the breaker strip normally being so spaced that said resilient strip remains bowed in operative position.

2,348,596. **REFRIGERATION.** Gustav Marten Blomqvist and Sture Folke Torsensson, Stockholm, Sweden, assignors, by mesne assignments, to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Nov. 2, 1937, Serial No. 172,340. In Germany Nov. 10, 1936. 19 Claims. (Cl. 62-108.5.)



1. A grid for refrigerators having partitions to form ice cells and comprising a double walled partition including two members in side by side relation and means closely adjacent to each other, and means pivotally connecting said members intermediate the ends thereof so that said members are angularly movable with respect to each other into overlapping relation in a scissors-like manner about an axis coinciding with the pivotal connection.

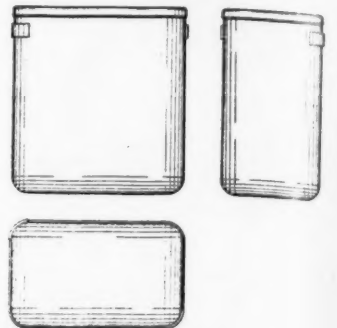
2,348,645. **REFRIGERATOR CONSTRUCTION.** Charles R. Quinn, Roslyn Park, Pa., assignor to Philco Corp., Philadelphia, Pa., a corporation of Pennsylvania. Application June 12, 1941, Serial No. 397,803. 2 Claims. (Cl. 220-9.)



2. A refrigerator cabinet construction comprising inner and outer shells provided with a door opening, said outer shell having an edge portion bent toward the inner shell peripherally of the door opening and the edge portion of the outer shell forming with said outer shell a recessed seat, a breakerstrip closing the space between the shells with the outer edge of said breakerstrip extending into the recessed seat of the outer shell, means detachably securing the inner edge of the breakerstrip of the edge portion of the inner shell, means for fastening the outer edge of the breakerstrip to the outer shell comprising a strip disposed in the recessed seat thereof and including a head portion overlying at least the adjacent edge front surface portions of said breakerstrip and another portion extending rearwardly between the breakerstrip and outer shell and inwardly along the edge portion of the latter, and clips engaging over said other portion of the strip and the edge portion of the outer shell to retain said strip in position, said clips having a portion thereof arranged for engagement with said outer edge of the breakerstrips thereby to retain the clips against displacement.

137,890. **DESIGN FOR A RECTANGULAR CONTAINER FOR FROZEN PROD-**

UCTS. Louis A. M. Phelan, Beloit, Wis. Application May 11, 1942, Serial No. 106859. Term of patent 14, years. (Cl. D58-17.)



The ornamental design for a rectangular container for frozen products, as shown and described.

AMANA Commercial REFRIGERATION
Modern Display Cases
Coolers, Refrigerators
AMANA SOCIETY, AMANA, IOWA

NIBCO WROT
FITTINGS FOR REFRIGERATION
NORTHERN INDIANA BRASS CO.
ELKHART, INDIANA

REFRIGERATION ENGINEERING INC.
LOS ANGELES - CALIFORNIA

Send for Bulletins
on **Wagner**
ELECTRIC MOTORS
MU-182 and MU-183
Wagner Electric Corporation
6441 Plymouth Ave., St. Louis 14, Mo., U.S.A.

fedders
BUFFALO, N. Y.

HEAT TRANSFER EQUIPMENT
MARLO
COIL COMPANY
SAINT LOUIS, MISSOURI

DAVISON'S
SILICA GEL
WITH
Specify DRYERS
THAT BEAR THIS LABEL
Ask your Jobber

REBUILDING SERVICE
Condensing Units, Dehydrators, Filters and Float Valves.
Prices upon request.
VALLEY REFRIGERATION SERVICE,
P. O. Box 572, Harrisonburg, Va.

UNIVERSAL COOLER
MARION OHIO
BRANDFORD ONTARIO
WE SHIP TO MANUFACTURERS ONLY
UNIVERSAL COOLER CORPORATION
Automatic Refrigeration since 1922

PURO ELECTRIC WATER COOLERS
Different models available for the various requirements of government agencies and war production plants.
PURO FILTER CORP.
440 Lafayette St., New York
DRINKING WATER SPECIALISTS FOR 40 YEARS.

JOIN WILSON DEALERS...

If there is no Wilson Dealer near you... If your organization is geared to modern commercial refrigeration needs, write us NOW, giving details as to your present sales-and-service force, and indicating which of the following Wilson lines interest you most:

- ZERO-FLOW and VERTI-COIL Life-Tested Milk Coolers for Dairymen
- ZEROSAFE Reach-In FARM FREEZERS
- ZEROSAFE Reach-In Frozen Food Storing-and-Dispensing Cabinets
- ZEROVAULT Walk-In Frozen Food Storage
- NORMAL TEMP. Walk-Ins and Reach-Ins
- PORTABLE SECTIONAL LOCKER PLANTS

WILSON CABINET COMPANY
Designers and Manufacturers
SMYRNA DELAWARE



ZEROVAULT Model 129-2

MIDWEST
Household and Commercial Refrigerator Cabinets
New Making VITAL War Products for Army and Navy
MIDWEST MFG. COMPANY

For: TRUCKS, LOCKERS, COOLERS, COUNTERS, CABINET CONVERSIONS, use:

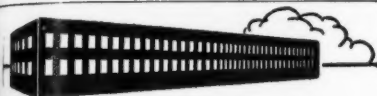
KOLD-HOLD PLATES

KOLD-HOLD MFG. CO.
LANSING, MICH., U.S.A.

HEAT INTERCHANGERS

- Large Surge Capacity
- High Heat Hold
- Sweat & Flare Fittings
- Low Cost

KRAMER TRENTON G.
Heat Transfer Products
TRENTON, N. J.

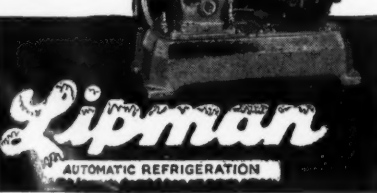


WAR INDUSTRIES NEED REFRIGERATION

The use of refrigeration in industry has been greatly accelerated by the war. In peacetime this expansion may logically be expected to continue. Write for literature.

GENERAL REFRIGERATION DIVISION

Yates American Machine Co., Detroit, Wis.



Servicing the G-E Refrigerator Line

General Procedures

Resetting Controls

Colder or Warmer

CA, SCOTCH-YOKE AND OPEN-TYPE MACHINES

One-knob controls usually must be loosened from mounting plate before they can be reset. Illuminated controls must be removed from machine.

1. Set control temperature knob at mid-position.

2. To reset control colder, turn knob clockwise for number of positions desired.

Cabinet air is changed about one degree between successive numbers on dial.

3. To reset control warmer, turn knob counterclockwise for number of positions desired.

4. Pry out sealing plug from center of temperature knob, if one is installed.

5. Remove screw from center of temperature knob and lift off knob.

Do not move or push inward on shaft to which knob was attached. Otherwise, a part within control may slip out of place.

6. Install knob at mid-position and install sealing plug.

With one-knob controls having defrost arm riding on rim of knob, tilt knob so that defrost arm goes up on rim of knob. Then push knob in place.

DR MACHINES

1. Refer to Fig. 41.

2. Reset A controls by turning main temperature adjustment screw, No. 11.

a. Turn clockwise to reset control colder.

b. Turn counterclockwise to reset control warmer.

3. Reset C controls by turning knurled temperature adjustment nut, No. 23.

a. Turn toward bellows arm to reset colder. This decreases compression on temperature adjustment spring.

b. Turn away from bellows arm to reset warmer. This increases compression on temperature adjustment spring.

4. Reset D and E controls by resetting temperature adjustment knob.

a. Set control temperature knob to mid-position.

b. To reset control colder, turn knob counterclockwise for number of positions desired.

c. To reset control warmer, turn knob clockwise for number of positions desired.

d. Remove screw from center of knob and lift off knob.

e. Install knob at mid-position.

Observing Evaporator Frost

Appearance, location, and amount of evaporator frost varies with usage, weather, control setting, and type of machine. In warm and humid weather, frost may have a glazed, icy appearance. In moderate weather with light usage, frost tends to be uneven and crystalline in form. Condition of frost on evaporator usually indicates whether or not a machine is refrigerating properly and should always be considered together with other machine operating conditions.

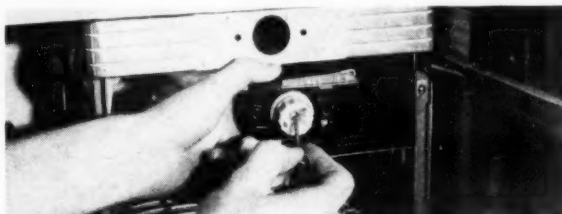


Fig. 32—Resetting control.

mometer in a container or liquid that has been in refrigerator for some time. Close door and allow thermometer to remain in liquid for several minutes. When a machine is running normally, in a room 70 to 80° F. and with control at mid-position, cabinet temperature should be close to the figures listed below for each type of machine.

| Machine | Cabinet Temperature |
|--------------------|---------------------|
| Early Scotch-yoke | 38-42° F. |
| Recent Scotch-yoke | 33-40° F. |
| CA | 38-43° F. |
| DR | 40-48° F. |
| Open-type | 38-42° F. |

Cabinet temperature may go a few degrees higher if room temperature goes above 80° F., if warm foods are placed in refrigerator, or if door is opened excessively.

Evaporator Temperature

Evaporator temperature can best be measured by freezing thermometer bulb to center of evaporator bottom. Bulb should definitely contact evaporator surface and should not be insulated from it by ice. Close door and allow machine to run for at least one complete on and off cycle. When machine stops, open door and quickly read thermometer while it is still in place. This is "cut off" evapo-

tor temperature. Close door and wait for machine to start. Then quickly read "cut on" temperature. These temperatures vary with different machines and control position, but "cut off" temperature will usually be between 5 and 15° F. "Cut on" temperature normally will be between 20 and 30° F.

CORDLEY
THE BATTLE PROVEN
Electric
WATER COOLERS
THE PROVING GROUNDS OF WAR offer dramatic confirmation of the ability of Cordley Electric Water Coolers to withstand hard knocks. Supplied since 1942 for shipboard use to the Navy (Contract NKS 9982) and to the Maritime Commission. These same Battle-Proven Coolers are now available for essential uses on land. Write for facts.

CORDLEY & HAYES
452 Fourth Ave., New York 16
Manufacturers of Water Coolers Since 1889

Headquarters
for
PARTS AND SUPPLIES

FOR ALL TYPES OF REFRIGERATION

SEND FOR OUR CATALOG ON YOUR LETTERHEAD

THE HARRY ALTER CO.

1728 S. Michigan Ave.
Chicago, 16, Ill.

Two Big Warehouses
to Serve You

134 Lafayette St.
New York, 13, N.Y.



BUY BONDS TODAY AND PLAN FOR TOMORROW OUR POST-WAR PROGRAM WILL BENEFIT YOU!

ASK US ABOUT IT NOW
WRITE DEPT. 220

FOGEL REFRIGERATOR COMPANY Since 1899
Philadelphia, Penna.

★ Meet CLIFFORD B. SHREVE, Chief Engineer, who has always had an important role in the development of Tyler Commercial Refrigerators. Cliff has worked night and day to help Tyler do a job in this war. Over and above that, he has kept alert to the tremendous possibilities of post-war refrigeration and has a cupboard filled with sketches and plans of products which will be the leaders in the post-war boom.

TYLER REFRIGERATORS

"ON ALERT"

A unit "on alert" looks for something to happen, is poised to order larger units into action at once.

Ranco Controls are "on alert" constantly. They are precision instruments, sensitive and accurate. But Ranco engineers them to be strong and long-lived, and armors them in plates of stainless steel.

Ranco Inc.

COLUMBUS, OHIO

CLASSIFIED ADVERTISING

RATES for "Positions Wanted," 5¢ per word; minimum charge, \$2.50.

RATES for all other classifications, 10¢ per word, minimum charge, \$5.00 per insertion.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count.

POSITIONS AVAILABLE

SUBSTANTIAL well known Midwest manufacturer of commercial refrigeration and air conditioning equipment desires competent refrigeration and sales engineer. This is unusual opportunity for a qualified man to secure permanent position in expanding organization offering excellent postwar opportunities. Box 1557, Air Conditioning & Refrigeration News.

WANTED refrigeration service man to service ice cream cabinets, soda fountains, and all types compressors. Write at once giving qualifications, references, and draft status. Post Office Box 3147, Orlando, Fla.

WANTED two experienced refrigeration service men. Commercial Frigidaire dealer. Permanent. Good wages. MILLER ENGINEERING CO., 118 North Winnebago St., Rockford, Ill.

WANTED experienced service man to service all types of commercial refrigeration and air-conditioning units by old established dealer in central Texas. In reply give age, draft status, past experience and references. Address CALCASIEU LUMBER COMPANY, P. O. Box 996, Austin, Texas.

TECHNICAL SCHOOL of long standing has permanent position for man with degree in science or engineering and good command of written English. Write full particulars. Box 1564, Air Conditioning & Refrigeration News.

WANTED: Chief Engineer, Gentle, by Eastern manufacturer serving the government, private industry, and jobber-distributor trade. Must thoroughly understand all problems of commercial refrigeration, air conditioning and ventilation. Splendid opportunity both now and post-war for right man. Our organization knows of this ad. Box 1541, Air Conditioning & Refrigeration News.

POSITIONS WANTED

PRACTICAL REFRIGERATING Engineer, eleven years experience in commercial refrigeration and air conditioning

application. Has experience erecting, servicing and selling. Desires position as salesman with refrigeration supply distributor, or with reputable concern as erecting engineer in metropolitan area of Colorado. Draft exempt. Best of references. Box 1556, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

USED EQUIPMENT WANTED: Air conditioning and refrigeration systems and machinery including self-contained units, coils, high-sides, shell and tube coolers and controls. Highest cash for large sizes. We urgently need two 15 HP motors and two compressors without condensers. E. M. FAIRBANKS CO., 475 Fifth Ave., New York 17, N. Y.

EQUIPMENT FOR SALE

FOR SALE 200 Frigidaire Model "O" 1/2-hp. \$65. 300 Frigidaire Model "K" 1/2-hp. \$35. 200 Kelvinator Model 5563 1/2-hp. \$42.50. 2, 4, 6 hole converted ice cream cabinet. All units are in running condition, air cooled with 60 cycle 110-220 volt motors. All orders F.O.B. New York. 25% deposit with order. Send for surplus stock catalog. EDISON COOLING CORP., 310 E. 149th St., New York, N. Y.

DRY BOTTLE COOLERS. ELECTRIC. Equipped with vending machine, blower coil, and self-contained 1/4 H.P. Universal Cooler Corporation unit ready to plug in. Brand new. Streamlined. No priority required. Price \$132.50 net. GENERAL REFRIGERATOR COMPANY, 5400 Eadom St., Philadelphia, Pa.

FRANCHISES WANTED

LARGE AGGRESSIVE company is post-war planning. Now servicing 50,000 domestic refrigerators. In business over 15 years, possessing exceptionally good realty contacts and invaluable good will. Desires distribution for New York City area. Stability and financial background guaranteed. ACME REFRIGERATION CO., 634 Dean St., Brooklyn, New York.

WANTED Service Franchise. Refrigeration service company in New York City seeks service franchise on domestic refrigerators. We believe the service is as important as the manufacturing. An organization built on recommendations. Established 1932. Financially responsible. Best references. We occupy 4500 sq. ft. of floor space on one floor. Show room 800 sq. ft. available. FRANK SERVICE COMPANY, 261 East 161st St., Bronx, N. Y.

Determining Running Time

Running time varies with the cabinet load, control position, temperature around refrigerator, and type of machine. Any figure given for running time must be approximate and must assume certain conditions; for this Handbook, the figures are based on operation in a temperature of 70 to 80° F.

| Type of Machine | On | Off |
|--------------------------|-------|-------|
| Scotch-yoke | 2-5 | 10-20 |
| CA | 3-5 | 10-20 |
| DR with oven evaporators | 20-40 | 30-60 |
| DR with open evaporators | 4-5 | 10-15 |
| Open-type | 3-5 | 10-15 |

Machine will run more and stop less under following conditions:

1. Room temperature is warmer than 80° F.
2. Cabinet air is made colder than normal.
3. Water or desserts are being frozen in evaporator.
4. Warm foods are placed in refrigerator.
5. Frequent or long cabinet door openings.

Measuring Cabinet Temperature

Cabinet air temperature should be measured by placing a clean ther-



Ask Your Jobber

Veterans a Source Of New Repairmen

(Concluded from Page 1, Column 4)
Employment Service have representation. These employment representatives are anxious to fit returning veterans into jobs best suited to their qualifications, and into industries where future growth and extension is contemplated.

Following is a list of Veterans Representatives by states:

- ALABAMA**
S. E. Greene, 1800 First Ave., North, Birmingham 3.
- ARIZONA**
Glenn A. Snodgrass, 818 Security Building, Phoenix.
- ARKANSAS**
John A. Pearman, Old Post Office Building, (Box 2019), Little Rock.
- CALIFORNIA**
Urban F. Stewart, 401-02 Sharon Building, 55 New Montgomery St., San Francisco 5.
- COLORADO**
R. Dale Mickle, 470 State Capitol Annex, Denver 2.
- CONNECTICUT**
Arthur V. Geary, 122 Washington St., Hartford 6.
- DELAWARE**
John P. Benson, 601 Shipley St., Wilmington.
- DISTRICT OF COLUMBIA**
Howard S. Fisk, 1022 Fifteenth St., N. W., Washington 25.
- FLORIDA**
Ralph E. MacDonald, 201 City Office Building, Tallahassee.
- GEORGIA**
J. P. Kelly, 86½ Luckie St., (Box 1276) N. W., Atlanta 1.
- IDAHO**
Terry Prater, 159 South Eighth St., (Box 877), Boise.
- ILLINOIS**
H. H. Weimer, Rm. 300, 222 W. North Bank Dr., Chicago 54.
- INDIANA**
Melville W. Hankins, 141 South Meridian St., Indianapolis.
- IOWA**
John H. Quigley, 419 Federal Office Building, Des Moines.
- KANSAS**
A. Ross Neville, 439 New England Building, Topeka.
- KENTUCKY**
H. H. Jeffries, 520 Federal Building, Louisville.
- LOUISIANA**
Louis W. Dawson, 127 Elk Place, New Orleans 13.
- MAINE**
Francis J. McDonnell, 76 Pearl St., Portland 3.
- MARYLAND**
A. Vernon Collison, 935 O'Sullivan Building, Baltimore 2.
- MASSACHUSETTS**
Irving J. Loucraft, 881 Common-

wealth Ave., Boston.

MICHIGAN

Russell D. Holmes, 1164 Penobscot Building, Detroit 26.

MINNESOTA

Stuart V. Russell, 369 Cedar St., St. Paul 1.

MISSISSIPPI

L. W. Brandon, 207 Johnson-Spengler Bldg., Jackson.

MISSOURI

Theodore Marks, 310 East Capitol Ave., Jefferson City.

MONTANA

R. B. Downs, 322 Fuller Ave., Box 953, Helena.

NEBRASKA

W. H. Andresen, 1220 N St., (Box 1033), Lincoln 8.

NEVADA

Harry Z. Guerin, Bradley Building, (Box 2349), Reno.

NEW HAMPSHIRE

Damin Bouchard, 34 South Main St., Concord.

NEW JERSEY

Thornton Webster, Room 222, Hunt Building, 219 E. Hanover, Trenton.

NEW MEXICO

James A. Tadlock, 111 South Sixth St., (Box 1492), Albuquerque.

NEW YORK

F. G. Newcomer, 28th Floor, 11 West 42nd St., New York 18.

NORTH CAROLINA

Ruffin C. Godwin, Caswell Building, Raleigh.

NORTH DAKOTA

Ed Kibler, Box 1242, Federal Building, Fargo.

OHIO

Orin Schmitz, 427 Cleveland Ave., Columbus 16.

OKLAHOMA

Guy C. Knarr, 612 American National Bldg., Oklahoma City 2.

OREGON

J. Richard Smurthwaite, Jr., Rm. 204, Pioneer Post Office Bldg., Portland 4.

PENNSYLVANIA

William O. Igenfritz, 1835 North Third St., Harrisburg.

RHODE ISLAND

John F. Radikin, 901 Union Trust Building, Providence.

SOUTH CAROLINA

Felix W. Goudelock, Rm. 1008, Palmetto Building, Columbia.

SOUTH DAKOTA

Louverne J. Ballou, 422½ South Main St., Aberdeen.

TENNESSEE

Clark E. Sloan, 413 Cotton States Building, Nashville 3.

TEXAS

Thomas L. Ward, 208 Brown Building, (Box 957), Austin.

Thomas D. Kimbro, Assistant, 208

Brown Building (Box 957), Austin.

UTAH

J. Harry Hickman, 1201 Continental Bank Building, Salt Lake City.

VERMONT

John H. Phalen, 14 Cottage St., Rutland.

VIRGINIA

E. Clyde Smoot, 311 Broad-Grace Arcade, Richmond 19.

WASHINGTON

James C. Grant, 201 Ranke Building, Seattle 1.

WEST VIRGINIA

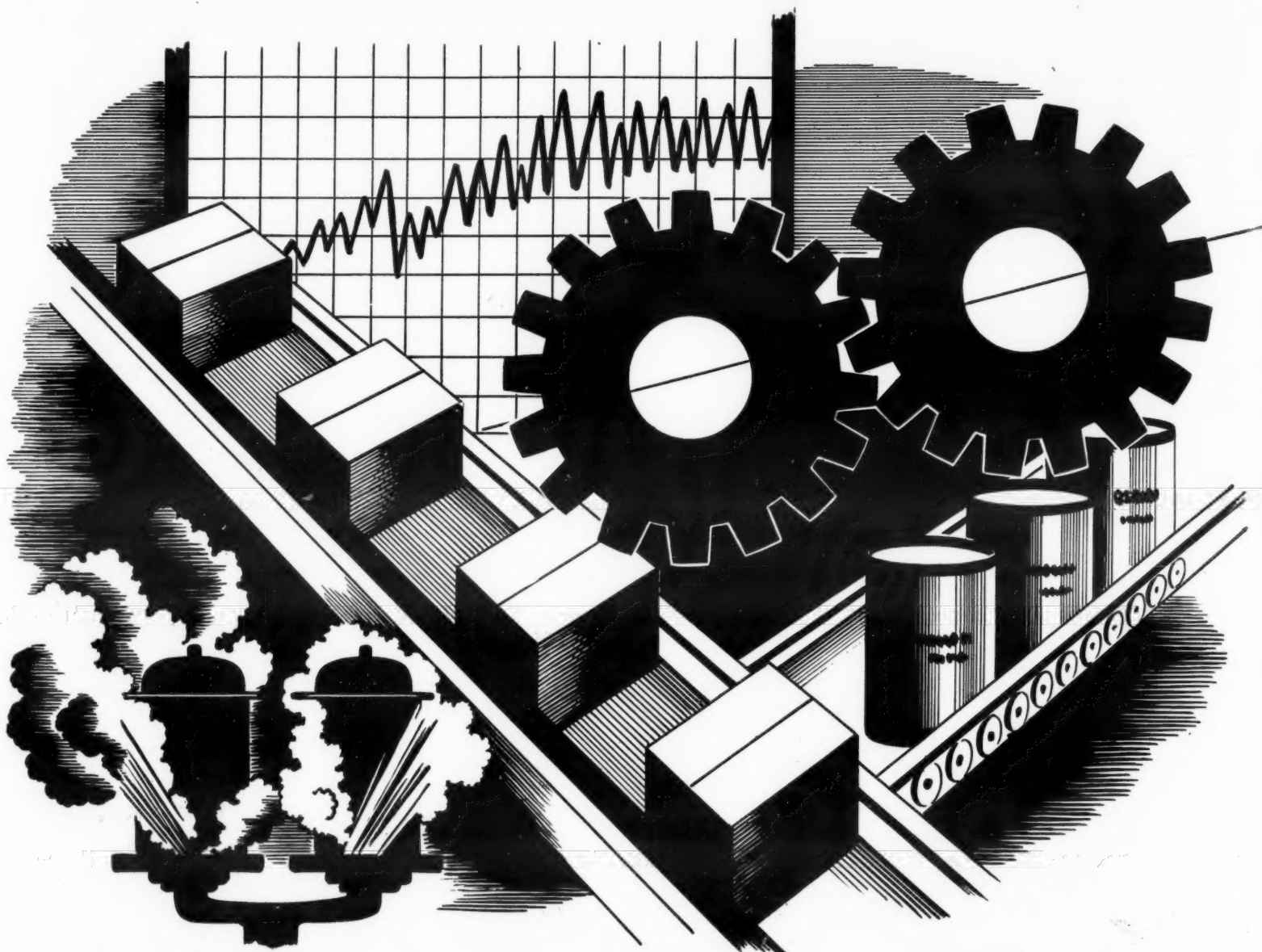
Charles L. Rolfe, 510 Chamber of Commerce Bldg., Charleston 1.

WISCONSIN

William H. Siemering, Rm. 1105, State Office Bldg., Madison.

WYOMING

James F. Hook, 200 N. Wolcott St., (Box 760), Casper.



WORLD PRODUCTION CENTER

Nine years old . . . that's the average age today of the refrigeration equipment in America's food stores. And this equipment doesn't have nine lives, either!

When the war is won it will be time . . . past time . . . to replace it. ALL of it! Sounds pretty good, doesn't it? Good business! But listen to this. . . .

Hundreds of new food storage applications . . . such as farm and home freezers, locker plants, milk coolers . . . will be waiting. New applications in industrial processing . . . such as rivet cooling, raw materials conditioning, finished product aging, coolant temperature control . . . are ready. New markets are eager to be supplied . . . new customers are crying to be sold.

Production alone is not enough. Distribution will be the bottle neck. Sales and service must grow to meet the demand. New applications . . .

new customers . . . new profits . . . combine to create an opportunity of colossal proportions. We can produce . . . are producing . . . on an unprecedented scale. (Much of it is filling war requirements of Army, Navy, Air Forces and Merchant Marine.) The point is . . . can you keep pace with this production after the war? We're counting on you!

Now is the time to prepare . . . make new contacts . . . learn new applications. Now is the time to get ready for the new business and new prosperity to come.

The Bush Manufacturing Company, Hartford, Connecticut . . . 415 Lexington Avenue, New York . . . 549 W. Washington Blvd., Chicago.

BUY WAR BONDS

PENGUIN PETE



Bush

HEAT TRANSFER PRODUCTS

GENUINE
MAYFLOWER
CONDENSING UNITS AND PARTS
Jobber Inquiries Invited
A complete line backed by nearly a quarter century of user confidence. Write for prices.
MAYFLOWER PRODUCTS, INC.
13 S. 5th St., Richmond, Ind.

MASTERCRAFT
ADJUSTABLE PAD AND CARRYING HARNESS
Endorsed by thousands!
Used and endorsed by thousands of refrigerator dealers in the United States and Canada.
Pad is adjustable to all makes and sizes of refrigerator cabinets; thoroughly protects finish of cabinet from scratches and marring during moving; easily and quickly put on or off; sturdy, lasting construction; easily pays for itself in a short time. Price \$11.75 each.
Attractive lettering of your name on pad at \$2.00 each extra.
Harness is a separate unit from the pad, is adjustable, and provides a simple and convenient arrangement for carrying your refrigerator more safely and easily. Price \$8.50 each.
Write for complete folder and prices on pads for refrigerators, washers, irons, ranges, radios; also furniture pads and protective covers. All prices subject to change without notice.
BEARSE MANUFACTURING CO.
INCORPORATED 1921
3815-3825 Cortland Street, Chicago 47, Illinois